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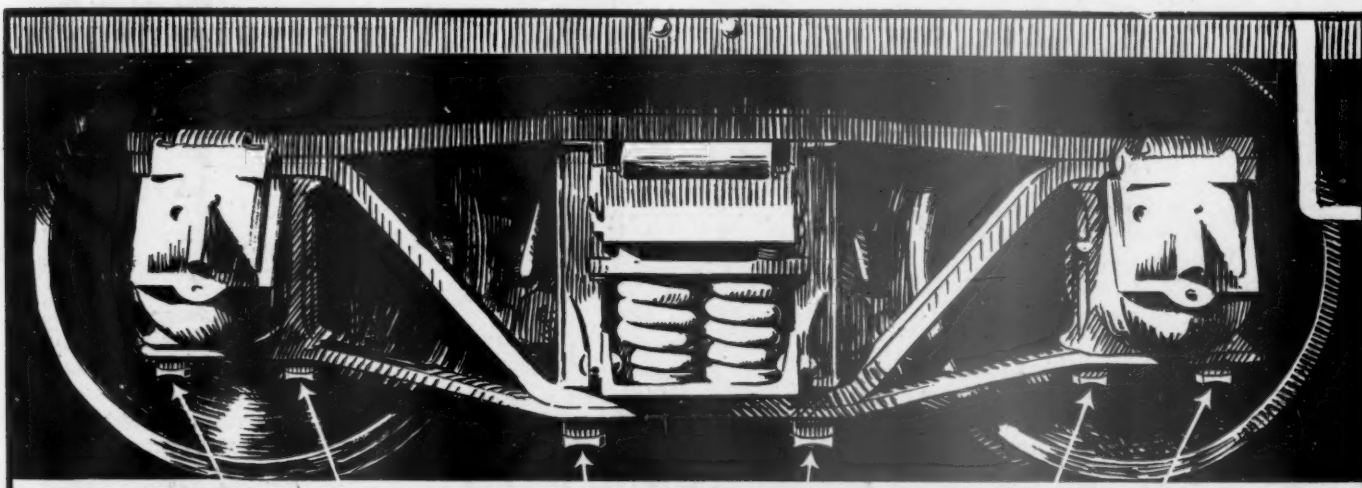
PERIODICAL ROOM  
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# Railway Age

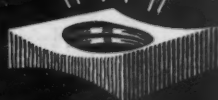
SECOND HALF OF 1923—No. 4

NEW YORK—JULY 28, 1923—CHICAGO

SIXTY-EIGHTH YEAR

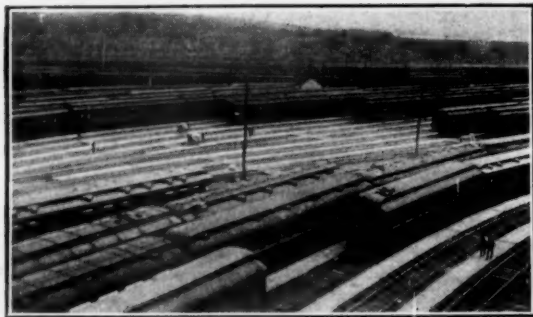


The result of thorough research  
to determine which lock nut, as  
viewed from every practical  
standpoint, provides the  
utmost security against  
the loosening of nuts  
and bolts on railway  
equipment, and the  
lowest costs for  
lock nuts and  
labor to apply  
them, points  
unmistakably to the  
**BOSS  
LOCK  
NUT**



American Bolt Corporation  
CHICAGO - BOSS NUT DIVISION - U - S - A

# Three pictures that tell their own story



HOW MANY OF THESE CARS—



WILL REQUIRE THIS—

DEPENDS ON WHETHER YOU USE THIS

**Y**ARD handling, with its attendant expense and trouble, is one evil you can largely avoid. From one car-shopping period to another this battery stays under the car. The only attention it requires is inspecting and flushing.

## Down go battery costs

The Exide is reasonable in first cost. Its repair and upkeep expense is low. Seldom does it lose any time out of service, for it is as rugged as a battery can be—well able to withstand the severe conditions of railway service.

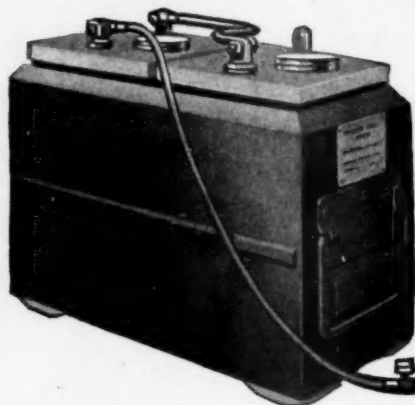
Through years of service under all sorts of working conditions, the Exide Battery has won the reputation of being long-lived. Ten years of life is not infrequent, and there are Exides giving excellent service today after thirteen years of continuous operation.

If you take the first cost of an Exide, add all its repair and maintenance expense, and divide this total by the service the battery performs—either in years, miles, or ampere hours, the resulting low battery cost will surprise you.

## Few repairs

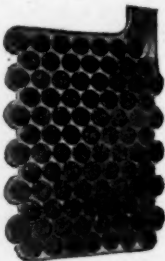
There is little chance for trouble to develop in an Exide Battery. Plates neither buckle nor grow. This makes possible the use of rubber jars, with freedom from all the evils that attend the use of lead linings.

The Exide "Giant" rubber jar lighting is improved.



does not develop leaks. It thoroughly insulates each cell, preventing short circuits and current leakage. It is not affected by acid or corroded by current. It is strong and sturdy—breakages are negligible.

Exides need cleaning only once during their life, because sediment is deposited slowly. Separators are unusually durable. The vent opening on the cell cover is large, so there is less chance for water and acid to spill. This results in longer life of containers and compartments. Should an Exide have to go without flushing for a longer period than usual, it continues to give good service.



*This is the Exide Manchester Positive Plate. It does not buckle or grow, as the frame is rigid, made of lead-antimony alloy, and the active material is not part of the frame.*

## Better light from the same lamps

Unless you have steady voltage you cannot have the best possible lighting. Where Exide Batteries are used there is a minimum variation of voltage; hence

The reason voltage varies less with an Exide is that its discharge voltage is high and well maintained; it does not require an abnormally high charging voltage; and weak or dead cells seldom develop.

## The battery with a pedigree

When you buy an Exide you are buying a battery that belongs to an old and honorable family. The first battery to be installed in the first electrically lighted cars in this country was an Exide. It is made by the oldest and largest manufacturer of storage batteries in the world.

Each Exide has back of it the experience and reputation of a company that for thirty-five years has specialized in the aim of making the best batteries that can be built. Just as there is an Exide Battery specially made for car-lighting, so there is a special Exide for every railway use—for signals, industrial trucks, drawbridge operation, train dispatching, and automatic train control.

Near you is one of the seventeen Exide Branches that assure you prompt shipment of renewal parts and cheerful, efficient sales service. A line to us will bring a representative from our nearest branch with detailed facts and figures on car-lighting that you will find valuable.

# Exide

## BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, PHILADELPHIA

*Manufactured in Canada by Exide Batteries of Canada, Limited, 133-157 Dufferin Street, Toronto*



# EDITORIAL

## Railway Age

The Table of Contents Will Be Found on Page 5 of the Advertising Section

In union there is strength; and there is nothing unreasonable in the proposition, advanced by a correspondent in another

### The Two-Edged Sword at the Crossing

column, that mail clerks (with the Post Office department backing them) and locomotive enginemen, with their brotherhood back of them, should join or support the railroad companies in aggressive and persistent action to punish automobile drivers who derail or endanger railroad trains by reckless conduct at crossings. The state and municipal authorities are making little, if any, progress in educating or subduing the reckless driver, and the railroads also are quite helpless; they can do but little beyond putting the generally disgraceful conditions before the public in every way possible. As long as campaigns for publicity are the only useful means in sight, it is very desirable that enginemen, mail clerks and everybody else shall promote such campaigns by getting enlightening facts into the newspapers as often as possible. Some few railroads make it a practice to collect costs, if possible, from drivers who destroy gates or other property, and have been doing so for years. Suits are entered in court where practicable, and where it seems wise to do so. Notably successful suits have been recorded occasionally. Every railroad might well deem it a duty to adopt this practice, even at some cost. It is important to follow up the small cases, because the striking cases, where persons are killed or great damage is done, are not very frequent in any one locality; and the making of the facts public, for the general education of the people, is not easy. The last bulletin issued by the Pennsylvania Railroad says that "Many instances of utter disregard of the crossing watchman's signal to stop are reported daily; and running through crossing gates while they are lowered for trains to pass, is a common occurrence." It is very desirable to report every instance to the local newspapers.

The excellent work accomplished at the recent meeting of the Mechanical Division of the American Railway Association

### Meetings of the Minor Mechanical Associations

tion was a demonstration of the value of such conventions. While this is by far the most important of the several railway mechanical bodies, the smaller associations, which largely are composed of the foremen in the various departments should not be overlooked. Among such organizations which have been doing excellent work may be mentioned those composed of general foremen; master blacksmiths; traveling engineers; air brake men; fuel supervisors; tool foremen; master boiler makers; chief interchange and car foremen; and master tinner, coppersmiths and pipe fitters. The past few years have been particularly trying ones for these smaller associations, and last year conditions were such that several of them were obliged to abandon the plans for their annual meetings or to hold delayed conventions with an attendance considerably below normal. The majority of these associations are composed of bodies of earnest and hard-working men who have the interests of the railroads at heart and are striving to solve the problems of their own departments which are steadily pressing with ever-increasing insistence for a real solution. Owing to a lack of proper appreciation of the work done by these smaller, but nevertheless exceedingly

important organizations, many men in minor supervisory positions have in times past attended such gatherings at their own expense, a thing that they should not be expected to do. The benefits derived from attendance at the conventions of these associations are real, both for the men themselves and for the railroads on which they are employed. The development and introduction of many new devices and methods for which such men are responsible and which have resulted from the interchange of thought at such gatherings, has many times repaid the small expenses incurred. Several of these associations have perfected plans for meetings this fall. It is hoped that the members will receive the full and hearty support of the higher executives, for without it, the benefits derived and the results accomplished will be far less than otherwise would be the case.

The railways have made much of their recent performances in the handling of the unusually heavy traffic for this season

### The Test is Yet to Come

without congestion and, in fact, while cleaning up a car shortage and converting it into a car surplus. In doing this, they have established a record which reflects greatly to their credit. However, an even greater task is ahead of them. Their records of performance are of necessity based on the number of cars loaded per week. A glance at these figures shows that the greatest increases in loadings have been in the merchandise and miscellaneous classifications and have occurred on the roads serving the industrial centers in the Eastern and Allegheny districts. While these products are going mainly to other large centers of population, they are moving throughout the entire country. We are now facing a new factor in traffic. The early harvest is now under way and grain is beginning to move from Texas, Oklahoma and Kansas. It is this grain movement which has caused the peak load of traffic in other years. This traffic moves almost entirely in box cars. The periods of maximum traffic heretofore have always been accompanied by acute car shortages, particularly of box cars. This deficiency in car supply is the result, in part, of the heavy traffic and also of the longer distances which this grain is transported in its movement from the grain producing areas of the middle west to the seaboard. The greater distance which this traffic moves increases the time required of each car. This large volume of grain also tends to concentrate at a few points, a condition which leads to congestion and delay in the release of the cars. Therefore, with the development of this grain traffic, the demand for cars will rise in greater proportion than a comparison of loadings would indicate. These conditions have always existed. Even with the best of supervision, they will continue to exist to some extent this year. For this reason operating officers cannot afford to allow their records of recent weeks to lull them into a false sense of security. Not only do all indications point to the conclusion that the number of cars required for loading will increase beyond any figure yet reached, but it is to be expected that the time required for each car under load will increase. Under these conditions only the most intensive supervision of all details of operation will enable the roads to maintain the splendid record they have established so far this year.

## An Explanation and Answer to Mr. Ballantine

WE PUBLISH ELSEWHERE in this issue a letter from N. D. Ballantine, vice-president of the National Railway Service Corporation, complaining because, as he says, a letter written by him and published in the *Railway Age* of July 14, page 60, "was mutilated through omissions, changes and additions of some figures of your (our) own." We regret very much to have to admit that Mr. Ballantine has good ground for complaint. Through a mistake his first letter, as published by us, in our issue of July 14, contained figures which were not in the letter as written by him, and this made an important part of his letter meaningless.

Mr. Ballantine in his original letter made the following statements:

"Regardless of an increase of \$3,752,316,000.00 or 22.1 per cent in the total investment in road and equipment, and of 21.5 per cent in aggregate tractive power during five and one-half years, the loaded car miles during the nine months ended March, 1917, exceeded by 1.7 per cent the loaded car miles made during the nine months ended March, 1923, six years later, this being the interval referred to in the American Railway Association Constructive Transportation Program for 1923 as 'the period in which the greatest volume of traffic ever transported in the history of the country during any corresponding period of 37 weeks.'

"In the latter period with a decrease in loaded car miles versus six years earlier, there were increases as follows:

Empty car miles .....	9.2%
Ratio of empty to loaded car miles .....	11.1%
Total car miles .....	1.5%
Tons per loaded car .....	7.8%

In order that Mr. Ballantine's figures for the two nine-month periods ending with March, 1917, and March, 1923, might be compared with figures for the two seven-month periods ending with April 30, 1917, and April 30, 1923, the corresponding statistics for these two seven month periods were entered in pencil upon the margin of Mr. Ballantine's letter. They were not of course, intended to be published as a part of Mr. Ballantine's letter, but unfortunately they were not erased before the letter was sent to the printer, and in consequence the second paragraph above quoted from his letter was made as printed in the *Railway Age*, to read as follows, the statistics given below in black face type being those that were included by our mistake:

In the latter period with a decrease in Loaded Car Miles versus six years earlier, there were increases as follows:

	7 mos. to April 30, 1923	Compared with	7 mos. to April 30, 1917
Empty car miles.....	9.2%		23.5%
Ratio of empty to loaded car miles.....	11.1%		19.0%
Total car miles .....	1.5%		9.4%
Tons per loaded car.....	7.8%		9.6%

We regret very much the injustice we did to Mr. Ballantine in publishing his letter in this mutilated form. We hope our readers who read his letter in the form in which it was published in our issue of July 14 will re-read it with the figures interpolated by us omitted in order that they may get the real meaning of what he actually said.

The point sought to be made by Mr. Ballantine in comparing the figures for the nine months ended with March, 1917, with those for the nine months ended with March, 1923, was that, in spite of the fact that in the latter period there was a larger investment in the railways and they had more equipment, the total miles moved by loaded cars was actually 1.7 per cent less than in the nine months ended with March, 1917. Mr. Ballantine explained in his letter which we published in our issue of July 14, and explains again in his second letter which is published in this issue, that he used the figures of these two periods in his comparison because the period of nine months ended with March, 1923, "was the one referred to by the American Railway Association in its Constructive Transportation Program for 1923." He has, of course, a right to select for purposes of comparison the statistics of any two periods that he pleases.

But the *Railway Age* has exactly the same right, and in spite of the mistake we made in publishing his first letter, there were two important statements made in the editorial in our issue of July 14 in reply to it which still stand uncontroverted by him. The first of these is as follows:

"The fact is, that in the nine months ended with March, 1917" (one of the periods the figures for which Mr. Ballantine used), "there was no such thing as a car pool and very little centralized distribution of freight cars, while in the nine months ended with March, 1923, the Car Service Division of the American Railway Association was exercising more centralized supervision over the distribution of freight cars than ever was exercised before when the railways were being privately operated. Therefore, if it were actually fair to compare the operating statistics of these two periods the conclusion they would logically suggest would be that the increase in the amount of centralized supervision of the distribution of cars had actually resulted in a decline in the efficiency with which they were used, which would hardly constitute a valid argument in favor of still greater centralization of supervision."

The second statement made by us which stands uncontroverted by Mr. Ballantine was as follows:

"As a matter of fact, however, this (Mr. Ballantine's) comparison of the results in these two periods of nine months is not fair. Throughout the period of nine months ended with March, 1917, the railroads were handling a maximum business. On the other hand, in July, August and part of September, 1922, which he included in his second period, the coal strike was still in effect and preventing the railways from securing maximum utilization of their coal cars. In the seven months October, 1916, to April, 1917, inclusive, and the seven months October, 1922, to April, 1923, inclusive, the railroads had all the freight business they could handle. Therefore, these periods are in this respect comparable, and in the latter of the periods loaded car miles were more than 3.7 per cent greater than the former period. Furthermore, the number of revenue and non-revenue tons carried one mile in the latter period was 13½ per cent greater than in the former period."

Mr. Ballantine, in his letter which we publish in this issue, says: "It is gratifying and encouraging to us to learn that the *Railway Age* now recognizes that the complete pooling of box cars during periods of depression would 'doubtless reduce empty car mileage.'" He adds: "Since the records show that periods of depression usually exist from two-thirds to three-fourths of the year, it is a forceful argument in favor of the Warfield plan." Mr. Ballantine in these sentences has misstated and misinterpreted what the *Railway Age* said. The *Railway Age* did not use the phrase "periods of depression." What we said was: "Doubtless, under a plan of complete pooling of box cars the amount of empty mileage made in years of depression would be reduced." What we meant, of course, was "years of depression" such as 1914, 1915 and 1921, when railway traffic is light for an entire year or more. Mr. Ballantine, by his statement that "the records show that periods of depression usually exist from two-thirds to three-fourths of the year," tries to twist our statement so as to make it apply to the ordinary fluctuations of traffic from season to season. Conditions with respect to the distribution of cars caused by business depressions lasting throughout entire years, and those caused by ordinary seasonal fluctuations of traffic are not the same, and Mr. Ballantine is not fair in quoting us as having said something we did not say, and then drawing a conclusion based upon his own mis-statement of what we said.

Mr. Ballantine asserts that under existing car service rules as now applied "it is manifest to transportation men that neither adequate nor economical operating results obtain." To what "transportation men" does Mr. Ballantine refer? He knows very well that the transportation men of the rail-



ways of the United States, acting through the American Railway Association, have taken the position that more adequate and economical transportation results are secured under the present system of owning and distributing cars than would be obtained under the plan of car pooling advocated by him.

Toward the end of his letter which we publish elsewhere Mr. Ballantine says: "Your treatment of my letter unfortunately typifies a strange unwillingness to consider fairly or intelligently constructive suggestions dealing with the subject." We regret the mistake made by us in publishing his first letter, but the fact that we published it and that we are now publishing his second letter is, we believe, a sufficient answer to his charge of "strange unwillingness to consider fairly or intelligently constructive suggestions." The policy of the editors of the *Railway Age* is to make the columns of this paper an open forum for the intelligent discussion of all railroad problems. Mr. Ballantine's addition to the organization of the National Railway Service Corporation has supplied it with what it did not have before, namely, a thoroughly experienced and able transportation man to present the Warfield plan and the arguments for it to railway officers as well as the public. We shall show our "strange unwillingness to consider fairly or intelligently constructive suggestions upon this subject" in future as we have in the past by gladly publishing any communication upon it which he may see fit to write and which the limitations of our space will permit us to publish.

## Increasing the Capacity of a Line

THE NUMBER OF CARS loaded with revenue freight during the month of June not only exceeded that for that month in any previous year, but also for any previous month in history. The number of cars loaded during the last week in June also established a new record for any week. These performances are all the more noteworthy because they were made during what is normally a period of relatively light traffic just prior to the beginning of the grain movement. With all indications pointing to large crops, the movement of which normally contributes to a peak business 15 to 20 per cent greater in October than in June, and in view of the heavy traffic already moving, it is evident that the roads will soon be called upon to handle a business considerably above that of any previous year. It was with this in mind that the American Railway Association outlined its program last spring and established certain objectives which would add to the capacity of the roads at the time of this peak traffic. Periods of heavy business in the past have always been accompanied by congestion which has resulted in the slowing down of movement. There are certain points on every road where congestion is most likely to occur because of adverse operating conditions, inadequate facilities or other limitations. These points limit the capacity of the entire road and collectively of the country as a whole. It is now too late to make any large additions to these facilities in the form of additional tracks, signals, etc. Relief must be secured through more intensive operation. It is in proportion to the efficiency of such measures that the roads will cope successfully with the business of this fall. A free exchange of ideas which have demonstrated their merit in similar periods is, therefore, of special value at this time. To afford an opportunity for this exchange of experiences, we announce a contest on Measures Which Will Increase the Capacity of a Line, to which we invite contributions. To stimulate interest, prizes of \$50 and \$35 will be awarded the first and second best papers received, respectively. The judges will base their award on the practicability of the methods described in meeting the present conditions and will give particular attention to descriptions of methods which have been

found effective and of the results secured therefrom. All papers should be addressed to the editor of the *Railway Age*, 608 South Dearborn street, Chicago, and must be received by August 25 to be considered by the judges.

## The Farmer-Labor Movement

THE ELECTION of Magnus Johnson by the Farmer-Labor Party as United States Senator from Minnesota seems to show quite conclusively that on the day of election, at least, the sentiment prevailing among the farmers of Minnesota was as radical as at any time within the last three years; and it has been very radical most of the time during these years.

Minnesota is primarily a wheat state. If the price of wheat had advanced ten cents a bushel just before the election Governor Preus might have been elected. The price of wheat declined ten cents, and Johnson was elected. The discontent among the farmers of the Northwest is due chiefly to the lowness of the price they are able to get for their wheat as compared with the prices they must pay for almost everything they buy. Magnus Johnson and the other radicals have been appealing to this discontent, and the decline in the price of wheat intensified it.

Mr. Johnson's campaign speeches, like those of other followers of Senators LaFollette and Brookhart, consisted largely of attacks upon the managements of the railways and upon freight rates. Like the other western radicals, he constantly repeated the charge that the capitalization and valuation of the railways are "watered," and argued that a reduction of the valuation should be effected by some means in order to bring down freight rates. Therefore his election will increase by the vote of one Senator the danger that legislation adverse to the railways will be enacted.

However, from a railroad standpoint, the situation is not without redeeming features. It would be useless to deny—and nobody acquainted with the facts does deny—that the farmers of the Central Western and Northwestern parts of the country, and especially those whose business consists almost exclusively in wheat raising, are in an unhappy position. Two years ago the tendency of the farmers, largely as a result of anti-railroad propaganda, was to attribute their troubles almost entirely to high railway rates. Their troubles, however, were due then, as they are now, to the fact that the prices of the things they produced, and especially of wheat, had declined much more in proportion not only than their railway rates, but also than the prices of almost all the things they had to buy. Many of them have slowly come to a realization that this is the case. This is illustrated by the fact that many of them are now seeking, not merely a reduction of railway rates, but legislation which would require the federal government to buy their wheat at some fixed minimum price, that usually suggested being \$1.75 a bushel. This is a project for raising the price of wheat relatively to the costs of all the things they must buy.

With the market price of wheat now only about \$1.00 a bushel, it is plain that if the government should subsidize the growing wheat at \$1.75 a bushel, it would soon incur a huge deficit which the taxpayers would have to pay. There does not seem to be any possibility of such legislation being enacted, but the fact that it is being advocated shows that its advocates realize that what the wheat farmer needs is not merely a reduction of railway rates but the establishment of a different relationship between the price of his wheat and the costs of all the things he buys.

Another feature of this radical Farmer-Labor movement which tends to rob it of its terrors is that it obviously contains within itself the seeds of its own destruction. It is in an important respect one of the most paradoxical political

and economic movements ever carried on in this country. The wheat farmer could prosper with the price of wheat at \$1.00 a bushel if he did not have to pay relatively so much more than before the war for almost everything he has to buy. Now, most of the money he is paying out in increased railway rates and increased prices is going to the labor employed in the railroad and various industries. The situation with respect to railway rates is typical. The total earnings of the railways in 1922 were \$1,600,000,000 more than in 1917. On the other hand, the net operating income which was earned and which was available for paying interest and dividends was almost \$200,000,000 less in 1922 than in 1917. These figures show that the owners of railway securities did not get the money derived by the railways from increased rates. Where, then, did the increased earnings of the railways go?

The railways paid \$942,000,000 more in wages to their own employees in 1922 than in 1917. They paid \$170,000,000 more for fuel. Most of this went to the coal miners in the form of increased wages. They paid about \$500,000,000 more for materials and supplies used in operation and maintenance. Most of this went to the employees of manufacturing concerns in increased wages. They paid \$91,000,000 more taxes in 1922 than in 1917. These facts show that the owners of railway securities did not get any of the increased earnings of the railways, but that, directly and indirectly, they were all, and more than all, taken by their own employees, by labor in other industries, and by the tax-gatherer.

The high wages now being paid in all the large organized industries of the country may or may not be justifiable, but the incontrovertible facts are that these wages are much higher than they were before the war, and that they are absorbing most of the money which the western farmer is paying to the railways and other industries in the form of railway rates and prices exceeding those that prevailed before the war. The paradox in the Farmer-Labor political movement is that it is a result of a combination of the western farmers with those who are getting most of the money that the farmer complains he is losing.

Sooner or later the parties to this combination must awaken to a realization of the fact that their aims are incompatible. The western farmer wants either an increase in the prices of the things he produces or a reduction in the prices of the things he must buy. Labor in the various industries desires to maintain its present standard of living. But the farmer cannot get transportation, clothing, building materials and other services and commodities at lower prices if present wages are to be maintained; and labor cannot maintain its present standard of living if the prices of farm products are to be increased without any corresponding advance in wages. The western farmers are turning to congressional legislation for a remedy for their situation. Will organized labor favor legislation that will cause the government to subsidize the production of wheat at \$1.75 a bushel and put up the price of bread? Samuel Gompers, president of the American Federation of Labor, recently volunteered to the farmers the advice that they should not seek legislative remedies. "Let me assure you out of a long and active experience," he said in an address to the National Wheat Conference at Chicago, "that there is no great magic in a law." This indicates that Mr. Gompers and the members of his organization will not enthrone over a proposal for legislation that would increase their cost of living. They apparently understand the relationship between their situation and that of the farmers better than the farmers do. If, however, labor will not help the radical farmers to get legislation to increase the price of wheat, how long will it be before these farmers will decide that labor is "double-crossing" them, and begin to entertain proposals for legislation to bring down the wages of labor? The fact is, the demand of the western farmers for reductions of freight rates is, in effect, a demand for the

reduction of wages on the railways and in other industries, because so long as the present wages prevail no reduction of rates that would really help the farmer will be practicable.

Messrs. LaFollette of Wisconsin, Brookhart of Iowa, Shipstead and Johnson of Minnesota, and other western radicals have won their recent political triumphs because, by attacking the railroads and other large industrial and financial concerns, they have succeeded in getting both the radical farmers and working men in their states to vote for them. When, however, they have to undertake the practical task of framing legislation in the interest of both the farmer, whose wheat is bringing only one dollar a bushel in the large markets, and the working man, who is receiving wages per hour or per day from two to even four and five times as high as he received before the war, they will find it impossible to frame constitutional legislation which will satisfy both these classes; and on that rock the Farmer-Labor movement will split.

The danger in this movement should not be minimized. If the farmers and organized labor should unite, not merely in electing some men of the Brookhart-Johnson type to Congress, but in persistently promoting legislation to despoil "capital" in the supposed interest of both labor and the farmers, the results might be ruinous, not only to the railroads, but to the entire industry and commerce of the country. But farmers producing wheat which is selling for \$1 a bushel, and workingmen in cities who are getting wages twice to four or five times as high as before the war have interests that are fundamentally so antagonistic that they cannot long act together.

## New Books

*Railway Accounting Procedure*, 1923 Edition. Edited by E. R. Woodson. 600 pages. 6 in. by 9 in. Bound in cloth. Published by Railway Accounting Officers' Association, 1116 Woodward Building, Washington, D. C. Price \$2.00.

The 1922 edition of *Railway Accounting Procedure* was a volume of 500 pages. It was considerably larger than its predecessor, and evidenced progressive growth in size and excellence over the earlier annual volumes known formerly under the name of R. A. O. A. Synopsis. The 1920 Synopsis, for instance, was a book of only about 230 pages. The 100 or so additional pages added in the 1923 edition represent the tabulation of the work accomplished by the busy Railway Accounting Officers' Association committees and adopted by the association as a whole at the annual meeting held in Richmond, Va., last month.

*Railway Accounting Procedure* is stated in its preface to be primarily intended for reference purposes in connection with the procedure of railway accounting. In effect it is a codification of the study and discussions carried on by the accounting officers' association over an extended period of busy and fruitful years. The book might be used as a textbook, but it is not intended as such. It deals mainly only with the details of railway accounting and presumes a knowledge of the underlying principles of the subject.

To our way of thinking the outstanding feature of the book is the evidence it gives of the amount of ground covered by the Accounting Officers' organization in its work. We believe it of special interest that so large a share of the work done should be of such character as to offer itself for permanent incorporation in a codification of this kind. There is also the fact that the practice of the R. A. O. A. in issuing an annual book of this kind so promptly after the annual meeting gives the accounting officers an up-to-date manual of unusual completeness and timeliness and therefore of increased usefulness. Many organizations have manuals. The difficulty with them sometimes is that they are not kept up-to-date, nor can one always be sure that one has necessary



supplements showing insertions or amendments in what the particular organization calls its recommended practice. The R. A. O. A. method of a new book each year, made readily available to all promptly, sold at a reasonable price and unusually complete might suggest a better method or more adequate plan for dealing with a situation of this kind.

The book is divided into several sections, freight, passenger, disbursement, overcharge, claim rules, terminal accounting, etc. The freight, passenger and disbursement sections are subdivided between the mandatory and recommendatory rules.

Following each section are the standard forms relating to the work covered in that section. An excellent index for each section assists its value for purposes of reference.

## New Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

### Books

*Life Insurance Investments in Railroads*, by Asa S. Wing. Address of the president of the Provident Mutual Life Insurance Company, Philadelphia, at the eleventh annual meeting of the Chamber of Commerce of the United States. 13 p. Published by the Chamber of Commerce of the United States, Washington, D. C.

*Modern Industrialism; An Outline of Present-Day Industrial Organization*, by Frank L. McVey. 2d ed. Part I, History; Part II, Industry; Part III, Administration. Railroads discussed as part of industrial system. See index under "Railroads" and "Transportation" for specific references. Published by Appleton, New York.

### Periodical Articles

*Another Forward Step in Electrification; How the Virginian Railway Will Replace Steam with Electricity for Hauling Heavy Trains*. Scientific American, August, 1923, p. 92, 141.

*Chief Stone and All His Works; Locomotive Engineer, Labor Leader, Real Estate Operator, Coal Mine Owner—and now Banker*, by Charles Frederick Carter. Success, August, 1923, p. 50-51, 94-95.

*The Denver & Rio Grande Reorganization*, by Joseph M. Goldsmith. The unsnarling of a famous railroad tangle; showing how Denver & Rio Grande security holders will fare. Magazine of Wall Street, July 21, 1923; p. 511-12.

*Efficient Railway Transportation Vital to Future of United States*. Articles I-V. By Albert B. Cummins. Senior senator from Iowa and chairman of Senate Committee on interstate commerce, discusses present rail situation and remedies. Washington, D. C., Post, July 20, 1923, p. 1, 17; July 21, 1923; p. 4; July 22, 1923, p. 6; July 23, 1923, p. 11; July 24, 1923, p. 5.

*Leaders Declare Outlook Warrants Constructive Action*. Interviews on the general business situation. Outlook for rails discussed by Daniel Willard. Forbes, July 21, 1923, p. 473-74, 489.

*Leasing the Italian Railroads*. Causes of proposal and comments of foreign press. Literary Digest, July 21, 1923, p. 19-20.

*Let's Go Back to the Small Town; a Job for Superpower*, by Charles Merz. One of a series of articles on the decentralization of industry through superpower development. Collier's, July 28, 1923, p. 13.

*Situation of Belgian State Railroads*, by Leigh W. Hunt. Reduction in annual deficit and other accomplishments in 1922. Commerce Reports, July 23, 1923, p. 242-243.

## Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

### Another Letter from Mr. Ballantine

[Editor's Note.—An editorial explaining the mistakes made by the *Railway Age* in publishing Mr. Ballantine's first letter in our issue of July 14, and commenting on the following letter, is published elsewhere in this issue.—EDITOR.]

BALTIMORE, Md.

#### TO THE EDITOR:

It is gratifying and encouraging to us to learn that the *Railway Age* now recognizes that the complete pooling of box cars during periods of depression would "doubtless reduce empty car mileage," the admission appearing in your editorial pages 56 and 57 of July 14 issue. Since the records show that periods of depression usually exist from two-thirds to three-fourths of the year, it is a forceful argument in favor of the Warfield plan. Your various deductions upon the limited data set out in the editorial referred to does not justify us, however, in agreeing that economies would not exist during periods of heavy demand, as well as during periods of depression. Any conclusion upon past performances should carry with it consideration of the fact that cars have been and are now being handled under rules requiring their return to owner regardless of his immediate needs or the economies involved. Under such a principle, it is manifest to transportation men that neither adequate nor economical operating results obtain.

No reply has as yet been received to my letter to you dated July 3. It has, however, been noted that the *Railway Age* of July 14 on page 60 published what purports to be a letter signed by me, but which was mutilated through omissions, changes and additions of some figures of your own, so that not only its intent could be misconstrued, but so that it could not even be understood by any one competent to make ordinary analyses of railroad statistics. My letter was written in the hope that consideration of, and adherence to, related facts would develop clearer reasoning and more accurate deductions upon a subject vital to the country as a whole and especially so to the largest portion of your readers. Unfortunately it is not our first experience along the line of misconstruction, misinterpretation, misrepresentation or the ignoring of our efforts to constructively aid in solving a most complex problem. This instance, however, coupled with your editorial of misconstruction, while typical, is the most amazing illustration of that attitude which has yet come to our attention.

#### Efficiency:

The first part of my letter of July 3 was headed "Efficiency" (which you omitted), and deal solely with the fallacy of relying upon limited mass figures as a basis for determining relative freight car efficiency. In the fifth paragraph my figures covered a period of nine months instead of seven months as published by you. A column of percentages covering four items was inserted by you and published as if a part of my letter, without explaining the mutilation and making it impossible for my figures to be understood.

You credit me with undue skill in the selection of a period for making comparisons. My letter clearly indicates that the period nine months ended March, 1923, was the one referred to by the American Railway Association in its Constructive Transportation Program for 1923, in which reference was made to the strikes and difficulties overcome and were well known to me and most citizens of the United States. The first sentence of my letter under the heading "Efficiency" meant exactly what it said, "With no intent to disparage the efforts being made or discredit the results being obtained by individual carriers, but with a real desire to look the matter squarely in the face . . ." Having recently testified before the Interstate Commerce Commission in their Docket No. 14489 "Re Adequacy of Equipment" and filed with them a graphic chart covering sixteen years of certain related (but not conclusive) facts with respect to railroad operation, it required no particular skill or cunning to locate a period when the loaded car miles exceeded the loaded car miles made during the period referred to by the American Railway Association. The nine months ended March, 1917, was that period and was used as a basis for comparison. This one fact was "striking" to me and led me to obtain some additional data which I thought would also be "striking" to you and some of your readers and show the inconsistency of attempting to analyze so complex a problem with such limited information.

I have been a reader of and subscriber to the *Railway Age* for many years, and at its request have from time to time contributed to its columns in an earnest effort to aid in solving some of the complex technical problems connected with transportation. My letter to you of the 3rd was written in the same spirit, which was to stress the importance of facts—and then some, before passing judgment. If our reputable technical journals do not set an example in such direction have they the right to criticize if the "so called" radicals follow similar tactics? To say that I was genuinely surprised at your not receiving the communication in the spirit it was sent, is but putting it mildly.

All the statistics I actually used (but which were not correctly published by you) appeared after the words:

"As bearing upon the above points, the following comparisons for Class I Railroads should be of interest." and were given to uphold my argument that mass figures supported even by the additional data would not permit of a correct deduction, and therefore deductions by me were studiously avoided. For the same reasons I am unable to concur in deductions you make from the statistics included in approximately two columns of your editorial, and intruded by you into my letter as if employed by me or as if having any bearing whatever on the Warfield plan.

#### Warfield Plan:

The second part of my letter was headed "Warfield Plan" and dwelt solely with that subject; yet you also omitted that heading, although it was essential to a clear understanding of my comments.

No effort was made to analyze statistically the economies which might accrue under the Warfield plan. A statement of facts which were evidently known to you was made, and since no exception was taken thereto, we assume you are in accord therewith. You admitted economies would doubtless occur in connection with the pooling of box cars during periods of depression, but assumed without presenting evidence in support thereof, that such economies would not exist under the Warfield plan during periods of heavy demand. We disagree with your view.

Your editorial of July 14 indicates I did not read your previous editorial with an understanding mind when I referred in my letter of July 3 to your interpretation of President Harding's Kansas City speech, as "presenting arguments opposed to the Warfield plan of car pooling," and

you say, "What we actually said was 'The President made statements which might be construed to imply a leaning in favor of car pooling.'" That, however, is not all you said—you omitted the succeeding and most important thought left with your readers, which read as follows: "The President's argument against government management applies with almost equal force to the Warfield plan of car pooling." It was to question your interpretation of that address which prompted me to quote what the president actually said, and after reading your second editorial I see no reason for modifying my comments on your first editorial.

In the concluding paragraph of the editorial in your July 14 issue you make two criticisms of the advocates of the Warfield plan, as follows:

"First, in the supposed interest of the railways as well as the public they constantly make attacks upon the efficiency of management of the railways which are in their way as well adapted to prejudice public opinion against private management as the attacks made by Brookhart and LaFollette."

To my knowledge no criticism has been directed toward the management of any individual railroad, nor is any intended. There have been pointed out difficulties inherent to securing co-operation and proper co-ordinated action between railroads highly competitive in their relations one with the other, and it is the failure to recognize these facts that prompted us in asking Congress to constitute an agency of and by the railroads, which should be effective in bringing about proper inter-carrier relationship and prevent the necessity of railroads calling on the Interstate Commerce Commission to perform operating functions which the commission is not organized to handle. Facts have been stated and if facts in themselves criticize there should be no desire to suppress them, but rather a real effort made to remedy the situation. Your other criticism was:

"Second, they present a plan, the adoption of which they contend would remedy the car shortage, and then constantly advance arguments in favor of it which ignore many pertinent facts and are full of fallacies, and do not show how the adoption of the Warfield plan would tend to remedy the car shortage."

My letter was written solely with a desire: First, to develop clear thinking and sound methods of analysis in connection with the great and complex transportation problems confronting the country, and; second, to question your interpretation of President Harding's Kansas City speech as reflecting upon the constructive Warfield plan. Your treatment of my letter unfortunately typifies a strange unwillingness to consider fairly or intelligently constructive suggestions dealing with the subject and is, after all, the best answer to your second criticism.

Will you not kindly publish this letter verbatim that your readers may be set straight? N. D. BALLANTINE,  
Vice-President, National Railway Service Corporation.

## Making Efficiency Efficient

SPRING VALLEY, N. Y.

TO THE EDITOR:

In one of the June numbers of the *Railway Age* there appeared a brief editorial entitled "When Efficiency Is not Efficiency," in which attention is called to the danger of promoting the efficiency of one department at the expense of another, with an ultimate loss to the company as a whole.

This was illustrated by an incident relating to the transfer of certain duties from the mechanical to the supply department, intended to bring about greater economy, but which resulted in an increase of expense to the latter department without a corresponding, or greater, decrease in the expenses of the former.



It is true, unfortunately, that a tendency is frequently displayed for one department to seek to profit at the expense of another, without due regard to the interest of the service as a whole, and especially is this the case when, for any reason, it is sought to discredit the activities of those who seek to show that an improvement can be effected by transferring certain work to other hands. In such cases there is always the implied criticism that the work is not being done as well as it should be and, naturally, this is resented by those responsible for it, and begets an effort to show that the calculated improvement is imaginary. Besides, there is always the temptation to grasp every opportunity of increasing the force, where it can be done without apparently increasing the departmental payroll; and the combination of the two makes it difficult for human nature to resist the impulse to seek both vindication and profit, at the same time, even though the company may be the loser in the end.

This has been particularly true with regard to the development of the service of supply, and it is full time that serious attention was directed to the practice with a view to ending it. The incident on which the editorial is based is not an isolated one, by any means, but is the general practice of all departments on all railroads, wherever it is sought to establish a really efficient service of supply. The supply department is regarded as an interloper by the other departments, which are always reluctant to surrender control of the material they use, ostensibly because they are fearful of the effect on their work; subconsciously from a fear of having their possible shortcomings exposed. Another "incident" which came under my personal observation when a newly organized supply department took charge of the scrap yards and established a reclamation plant, was the presence of a noticeable quantity of broken castings reaching the scrap yard from a large shop, bearing recent and unmistakable marks of the sledge. It was the evident intention that no castings fit for further service should be found among the discarded material coming from that shop, or that the "interloper" should obtain credit for salvaging usable material, which might possibly reflect upon those who had formerly disposed of the scrap without question. No thought of the ultimate cost to the company entered into this calculation, which took little account of the added expense incurred in breaking the castings. I will venture to say that there is not a supply department officer on any railroad who could not recount similar incidents from his own experience, and the lesson it should teach is the great care which should always be taken to make efficiency really efficient.

In reorganizing the service of supply this should begin before the service is instituted, for the reason that no reliable and comprehensive records, either of the material itself, or of the cost of handling it, are ever to be found where the work is done by the several departments, and consequently there is nothing by which to compare the future with the past performance. To determine whether any real economy is being effected there must be a known basis of comparison, and this can be secured only by a prior survey of the entire situation pertaining to the material. It is essential that a painstaking inventory be prepared, not only of every item of unused material on the railroads, but of every employee whose time is devoted, either wholly or in part, to handling or accounting for it. Both are equally important. A "book balance" should never be allowed to serve as a basis for taking over any material without an actual inventory, and a "time schedule" should likewise be prepared covering all employees engaged in such work, and the time devoted to it by each of them. This is necessary for the protection, both of the departments interested, and of the company itself, so that if there is any loss of efficiency, it can readily be detected and the responsibility can be placed where it belongs. As a further precaution the individual employees, as well as the material, should be transferred bodily from the jurisdiction

and payroll of one department to the other, and in the case of two employees, each of whom devotes half of his time to the care of material, one should be taken, and the other left. It is only by such measures that the practices referred to can be corrected, and it can be conclusively demonstrated whether the alleged increase in efficiency is imaginary, or real.

Another "incident" coming to my personal notice, where the practice recommended here had been followed, and the employees were transferred along with their duties, was the resultant discovery that nearly 50 per cent of them were superfluous, and their elimination from the payroll more than counterbalanced the expense of better and more intensive supervision, which improved the service to a measurable degree.

It is not the intention to imply any criticism of any one, but simply to state existing conditions and suggest the remedy. These conditions are merely the outcome of human nature, as it has always been constituted, and must be leniently judged, on that account, but they may be remedied by the cultivation of a spirit of loyalty that places the welfare of the company before any personal gratification or temporary advantage to a single department, and by the exercise of the same care and foresight which any good business man would employ when taking charge of a business in which he had invested his personal fortune. GEO. G. YEOMANS.

## Seek College Men While Railroads Do Not

NEW YORK.

TO THE EDITOR:

Professor Dozier's article in the *Railway Age* of July 7 and the editorial "The Railroads and the Colleges" called to mind an interesting conversation which the writer recently had with the superintendent of transmission and distribution of a large electric light and power company. As the tall superintendent lit his cigar and leaned back in his chair after luncheon, he said with an air of satisfaction, "Well, this year we beat the — Corp'n. to it," naming another large electric light and power company. "Beat them to what?" I asked. "In the colleges," he replied. "This year we had our scouts out fully two months ahead of theirs and we are going to get the cream of the graduates in the electrical line. Funny thing, — University wouldn't recommend a man in their senior class this year. Said they had several good ones in next year's class, however, and we are watching them." "What do you watch for?" I asked. "Oh, we want to know all about these chaps, not only how they do in their studies, but what athletic teams they make, what kind of mixers they are, what qualities of leadership they show in the college activities, and how clean and sound of character they are." "What do you do with these birds after you catch them?" I inquired. "We put them to work in one department for a few months, then transfer them to another, then another, giving them a regular course, paying them good money, watching them, getting reports from the department head and trying to develop the line of work that they are best fitted for."

The conversation went gloriously on into methods of organization and training, but as it lasted three hours and a half it naturally cannot be set down here. The main point, however, is this. Here was an officer of a public utility company subject to governmental regulation as the railroads are; a company manufacturing and selling a service the same as the railroads are; a company, the ramifications of whose work are as technical and specialized as anything the railroads have to do, recognizing, appreciating and willing to pay well for *basic training*.

Green college or engineering school graduates would be

of no more use to the electric company as power station operators than they would be to a railroad as yard masters, no more fit to be assistant district superintendents for the power company than they would be assistant division superintendents of a railroad without further and specialized training, but they have the foundation on which to build, and the electric company was not starting out with any intention of trying to make silk purses out of sow's ears.

No system of organization is worth a hoot without a definite, continuous and parallel system of training. Training consists of (a) study and (b) application. This is a big subject on which a great deal might be said if space permitted. I wonder if the railroads have ever definitely decided whether Professor Dozier's transportation course or those given in other colleges or technical schools are the best preliminary study for railroad work, or if they have ever drawn up any definite scheme of basic study as a preparation for entering railroad work, or a definite scheme for continued study and application after entry into railroad service.

C. P. S.

## Being a College Man Is No Handicap

NEW YORK CITY

TO THE EDITOR:

Any young man willing to work and with something in the front of his head above his eyes has the best sort of a chance today on a railroad, the best chance anybody ever had.

Being a college man is no handicap, provided the lad is sensible and has a determination to win.

No line of effort—railroad work least of all—is likely to be fixed for college or any other men.

Anyone who adds mere words to the discussion about college men on railroads must feel no pride in doing it. But let me take a chance in recommending our college people, professors and presidents, to say to their boys:

Wherever you go—work!

Work or you will not accomplish!

Work in the old-fashioned way!

Work and win!

Work!

G. M. BASFORD.

## Comments on a Briton's Criticism of Our Railways

SCHENECTADY, N. Y.

TO THE EDITOR:

In the latest issue of the Railway Gazette, published in London, appear some impressions from a traveling correspondent in America whose comments seem to fit our conditions in this country very closely.\*

He admires our big railway terminals—in New York, Washington, Detroit, etc., and says that Great Britain has much to learn along these lines, but Great Britain is way ahead of us in sleeping car accommodations. Especially he finds the atmosphere in them very bad.

But his criticism amounts to but little for he does not touch the main point. The English have more comfort in sleeping cars because they have compartments; we put up with less space, and many people ride in sleepers who would not feel that they could afford to do so in Europe. And does not the Pullman company run compartment cars on every line where there is enough patronage to make them pay?

The Britisher's description of the smoking car, calling it a "caboose" at the end of the train, seems to indicate that

he has got sleeping car smoking rooms confused with ordinary smoking cars.

He also states that the engines and rolling stock would bring discredit upon any company in Great Britain. This is so true that it hurts. Much has been said lately about brightening up our cars with paint of individual colors, keeping them cleaner and making them altogether more attractive to prospective passengers. Those roads which have stepped outside the pale of standardization have already found that traffic readily responds to added attractiveness.

The gentleman says that our coaches ride better than English cars, which is quite an admission, but the starting and stopping is quite violent; which is also too true.

Another impression that this gentleman gained which annoyed him greatly was the constant ringing of the "cow bells" on the engines. He figures that this is "wanton torture" and Americans, unfortunately, must agree with him.

It would seem that if these minor annoyances could be reduced to a minimum or eliminated altogether that it would have a marked tendency to promote enjoyment for the traveler.

G. L. WILDER.

## Combine Against the Wild Driver

DETROIT, Mich.

TO THE EDITOR:

The best way for the railroads to get automobilists to exercise caution at grade crossings would be to sue those motorists who are responsible for wrecks, especially where trainmen and passengers are killed through derailments. The Post Office department, whose employees are endangered, and the organized trainmen, could well co-operate in making it expensive for those whose recklessness is responsible for delaying and derailing trains.

Experienced and tested enginemen who naturally safeguard their own lives, their trains and their passengers, are now the constant potential victims of motorists who are careless, or reckless, or full of hootch; or afflicted with defective vision or hearing, sometimes both. No physical or mental test is required before a man is granted the right to use a vehicle with express train speed which perhaps has defective brakes.

The fact that an automobile is damaged and its occupants injured or killed should not deter the railroads from suing the owner, or his estate. Little or no money damages would be recovered, in the majority of cases; but the fact that a resolute railroad was going to make the owner defend a suit would make them more cautious. Let the railroads, the government and the mail clerks turn the tables.

EDWARD L. MCCOLGIN.

## Steam Locomotives in Grand Central Terminal, New York

NEW YORK CITY.

TO THE EDITOR:

At the Grand Central Terminal a three-car special train, engaged by the Boston Post, waited with steam up—(From a newspaper account of the rapid delivery of photographs of the Dempsey-Gibbons fight.)

Why didn't the inspired reporter, who described the waiting special in the Grand Central Terminal with *steam up*, go further and tell how the giant *Mogul* dashed through the Park avenue tunnel, etc., etc., and give us all the other thrills usually connected with newspaper accounts of railroading? Was a special train ever run or a fast train ever wrecked, that was not hauled by a "giant Mogul"? In this case I hope they didn't smoke up the Grand Central too badly—at any rate it should be called to the attention of the authorities.

A. L. BOSTWICK.

\* This article was reprinted in part in the *Railway Age* of July, 14, page 68.



# Colonial Dining Cars for Baltimore & Ohio

## Unique and Attractive Effect from Harmonious Colonial Treatment of Finish and Furniture

**T**HE BALTIMORE & OHIO has recently placed in service two new dining cars of all-steel construction which have attracted considerable attention and exceedingly favorable comment for their unique and artistic finish which is in the colonial style. These cars are the outcome of an

architecture, furniture and decoration. The time and attention given to the details of design have produced a result that is noticeably simple and beautiful. It is questionable whether any dining cars previously built have been so artistically pleasing in their interior finish and equipment. They have been most fittingly named the Martha Washington and the Mount Vernon, names about which so much of the nation's earlier history clusters.

The colonial atmosphere is carried out in every detail. The paneling is in dull, lustrous mahogany with cream-colored



Every Detail Harmonizes Perfectly and Adds to the Colonial Atmosphere

idea which some of the railroad officers have had under consideration for some time. Bearing in mind the thought that the B. & O. traverses a section of the country that is particularly rich in historical interest and associations reaching back well into colonial times and the fact that the road's important trains pass through or reach the national capital, it seems most appropriate to bring some of this atmosphere into the design of the passenger equipment.

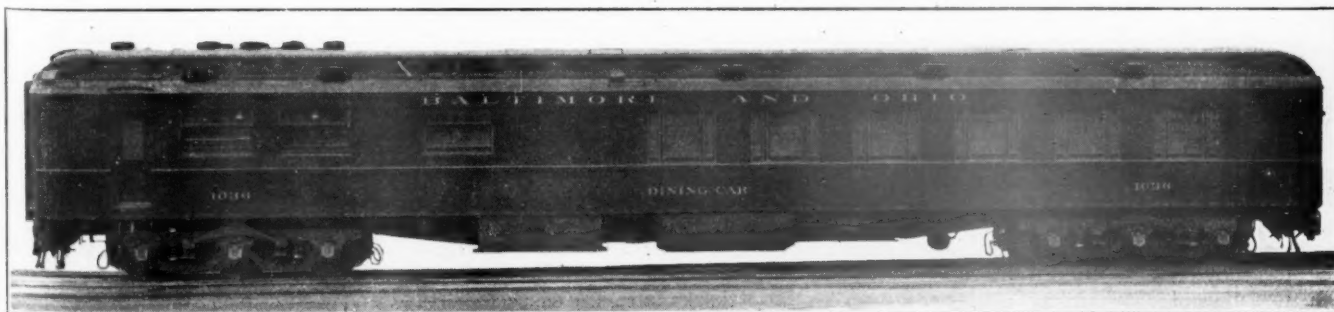
These dining cars were built by the Pullman Company but the design was worked out with the assistance of railroad officers and several recognized authorities in colonial archi-



The Broad Windows with Side Casements Tone with the Colonial Decorations

trimmings and head lining. The window shades are of delicate pink which harmonize well with the mahogany and cream. The carpet is brown with pink and blue figures in harmony with the other appointments of the car.

The ceiling lights are of the sunburst type while the side



The Two New Baltimore & Ohio Dining Cars are Named Martha Washington and Mount Vernon

lights are of a subdued, two-candle bracket Colonial design with pink shades to match the curtains. In the lighting fixtures as well as elsewhere simplicity of design is noticeable.

In place of the large sideboard ordinarily used by the steward, at one end of the car is a small table above which is hung a mirror, both of the colonial period. The silverware is of an appropriate design while the chairs are of mahogany with blue upholstery and of an effective Heppelwhite design. Seating capacity is provided for 36 persons.

The broad windows have hinged side casements which deserve particular attention, as is apparent from the photographs of the interior and exterior of the car.

Both kitchen and pantry are finished in white enamel and contain the latest types of cooking equipment, refrigerating apparatus, exhaust fans and ventilators. Even here a colonial atmosphere is suggested, for the kitchen utensils, such as pots, pans and kettles are made of copper and resemble those that may be seen in the kitchen at Mount Vernon.

These cars are now in service on trains between Washington and New York where they are evoking much favorable comment from passengers using them.

## Observations of a Transcontinental Traveler

By William S. Wollner

THE JOURNEY during which these observations were made was partially for the purpose of affording rest from the rigors of a busy railroadman's life and it was not originally the author's intention of recording his impressions for publication. However, as the *Railway Age* has given publicity to his comments on two earlier transcontinental trips and as these comments were not entirely complimentary to the managements and employees, the author believes it a duty to publish what he has to say in this article.

This journey covered some five thousand miles on six large railway systems west and southwest of Chicago, and was made during the latter part of April. Snow was on the ground during nearly all of the eastward trip and a blizzard was encountered. Despite this, all trains were on time at terminals and ran close to their schedules en route.

### Morale of Employees

Compared with the period following the return of the roads to their owners, the morale of railway employees now is excellent. The author took occasion to criticize certain railroads in the presence of their employees and in every instance the employees immediately took up the cudgels for their companies. In the same way, railroad men were anxious to defend the reputation of the rail transportation system from any criticism. They were particularly anxious to defend their roads when comments were made as to the relative safety of different properties and this tends to strengthen the view that organized safety activities in which the employees are permitted to participate actively have a distinct morale building value. It was interesting to note that no employee would admit that a particular accident on his road was due to the carelessness of either an employee or the management.

### Passenger Terminal Operation

Observations made on this trip indicate that the terminal depot operated by a railroad with its own employees is much better operated from the passenger's standpoint than the depot used by several roads and operated by a terminal company. Terminal company employees seem to lack the sense of individual responsibility for courteous service to

passengers that may be said to be the rule now with railroad employees. This is probably due to lack of pride in being part of a big organization.

An instance was noted where a traveler presented a suitcase for checking at the baggage room of a depot operated by a terminal company 20 min. before train leaving time, and asked if it would go on the train on which he was to travel, and was informed, "Maybe it will and maybe it won't. I don't know." In every case where this question was asked in a depot operated by a railroad company, the attendant looked at the clock and answered courteously.

At gates to trainsheds in railroad-operated terminals there was a genuine effort to assist the traveler but where these gates were in charge of a terminal company employee, passengers found it difficult to obtain helpful information and gates were often blocked with passengers uncertain as to whether they were taking the proper train. A solution of this matter was found in one large depot operated by a terminal company where each railroad's own men officiated at the gates leading to trains.

There is probably no more depressing place in which to spend any length of time than a large terminal, particularly one at which passengers change trains en route. The American railroads deserve a fervent "God bless you" for the way in which they have tried to make lighter the burden of the mother traveling with her young family and the old man and woman on a last journey to see the children who moved out West, or perhaps themselves on an eleventh hour search for a new start in life. Kindly, sympathetic matrons, comfortable waiting rooms, and the many other conveniences provided for the traveler should help the railroads win the public support they so well deserve from the unwarranted attacks from radical sources.

### Dining Car Service

An earlier article commented upon what the author considered the short-comings of the railway dining car service. Since its publication, the offending railroads have attempted to obviate the causes of criticism by applying the suggested remedies, and insofar as the observer is able to judge, the experiment has resulted entirely successfully. Club or plate breakfasts, lunches, and dinners at a reasonable price are served on many trains and are bringing as many, if not more, passengers to the diners from the coaches and tourist cars as from the standard Pullmans.

On a railroad operating south of Chicago where a dollar-and-a-half noonday meal is served and the *a la carte* prices are correspondingly high, it was noted that several parlor car passengers had provided themselves with "basket lunches" and that there was practically no patronage from coach passengers. An interesting observation was that waiters in dining cars serving reasonably priced meals were satisfied with ten-per-cent-tips, while those in cars serving higher priced food were apparently not satisfied with ten per cent of these higher prices.

Judged by smoking room gossip, what the traveling public wants of the railroads is faster trains, removal of the surcharge on Pullman accommodations, and insofar as the traveling salesman and merchant are concerned, script books of the type used during the period preceding the operation of the railroads by the government. An interesting phase of the public attitude is that a great many people are in favor of curbing the power of the Interstate and state commissions, believing that they are solely responsible for the slowing up of schedules, and other matters of which they complain. It was impossible to convince a group consisting of a merchant, a mine owner, a timber operator, and several others, that the Interstate Commerce Commission does not control the speed of passenger trains. These people believe that the commission refuses to allow the railroads to operate faster trains because to do so would foster competition between the roads.



# Civil Engineers Discuss Transportation Problems

## A Continuation of the Annual Convention Program on Various Phases of Railway Operation

**T**HE PROGRAM of the American Society of Civil Engineers presented at its fifty-third annual convention which was held at Chicago on July 11-13, contained a large number of papers on railway transportation problems. Three of the papers were published on page 107 of the previous issue of the *Railway Age*, while additional papers are abstracted below.

The papers published in the previous issue included one by J. W. Kendrick, chairman of the board, International-Great Northern, on Some Phases of Present Day Railroad Transportation, in which he discussed and compared railway expansion over a long period of years. He stated that the greatest reduction in expenses that has been secured in

railway operation, has been through the increase in train tonnage and the concurrent reduction in train mileage and that the constant pressure for lower rates has arrested railway expansion at times when there was a tremendous increase in the capacity for production.

The other two papers included A Modified Plan for the Consolidation of Railroads by John S. Worley, professor of transportation, University of Michigan, and the Principle of Terminal Station Design by Alfred Fellheimer, consulting engineer and architect, New York City. The latter paper gave detailed consideration to the specific requirements, the characteristic basic types of structures, the traffic to be handled, and the station, platform and track facilities.

## Railroads—The Arteries of Commerce

By James R. Bibbins

Consulting Engineer, Washington, D. C.

At the time of the Civil War the railroads of the United States handled 100,000,000 tons of revenue freight per year, at the end of the century 1,000,000,000 tons, and today, 2,500,000,000 tons. What does it mean to transport 2,500,000,000 tons over 180 miles average haul, also 1,250,000,000 passengers an average of 40 miles? One naturally thinks, first, of 400,000 miles of railroad and terminal tracks, 2,500,000 cars and 66,000 locomotives to haul this traffic. But there are more than 15,000,000 gross tons of shipping, big and little, 45,000 miles of electric railways, 12,000,000 motors and 2,500,000 miles of highway of which 186,000 miles are already designated as the main improved road system of the country. All of these agencies form a part of our transportation system.

One neglected aspect of this great transport plant is that, in no small degree, it is a problem of financing a peak load just as in the case of a power plant or street railway. These peaks occur every fall with the movement of commodities and also with every wide fluctuation in the business condition of the country as a whole.

America is pre-eminently the long-haul country of the world and is vitally dependent upon its rail carriers. It is said that a country's prosperity is based upon its surplus production, and it is more truth than fiction that what the American farmer receives for his grain is directly dependent upon the world price established at the local market at Liverpool less the cost of transportation and not the cost of his production plus transportation.

This great railroad network of about 265,000 miles of line is clearly the mainstay of our national life, and the rate system, the most sensitive part of the mechanism, whether right or wrong, has resulted in the establishment of thousands of communities where forests and deserts formerly existed. It is evident that a considerable distortion of these complex rate relationships must inevitably force a gradual readjustment of the location of industries, due to the relative importance of the factors of labor, raw materials and transportation. It is conceivable that greatly distorted long-haul rates might result in the forcing of all industries to the congested seaboard.

There is a great need of decentralization both in popula-

tion and industry, not only country-wide but also in the cities themselves. Although the growing percentage of city population may be due simply to accretion rather than migration from the country districts, it is clear that it has brought about problems of city congestion which may soon require drastic treatment. Highway development is undoubtedly aiding in this decentralization, but the railroads are the main avenues through which this desired redistribution will be brought about. It is not inconceivable that such further decentralization may gradually help to cure labor troubles with which the country is afflicted, especially in the congested centers.

### Meeting the Demands of the Future

If a reasonable population of 130,000,000 people is assumed by 1940, a revenue traffic of nearly 4,000,000,000 tons per year must be provided for. To meet this growth, at least \$10,000,000,000 new capital must be found, if invested along present standards.

For the decade ending 1910, highway transport commanded about one-third of the capital put into railroads; in the decade ending 1920, it commanded four times as much capital as railroads, i.e., approximately \$16,000,000,000, out of a total for all transportation of \$23,000,000,000, against \$4,000,000,000 for railroads.

These facts indeed challenge attention. Although the gross railroad investment per ton handled has reduced from about \$17 in 1880, to about \$8 today, little reduction has been made within the last 20 years, in spite of greatly increased traffic and efficiency—a fact that seems to indicate that the majority of the new capital has gone into expensive terminals, which is also indicated by an analysis of the track mileage additions through the years.

The traffic of the nation has grown in geometric ratio to the population, while facilities in freight houses, team tracks, wharves, transit lines and particularly streets, and roadways in the large centers have increased, if at all, only in arithmetical ratio. Thus, railroad tonnage has increased nearly as the cube and ton-mileage nearly as the fourth power, of the population. Terminal tonnage is probably increasing as the cube of the population, especially in view

of the growing proportion of city population to the total in the country. On the other hand, the motors are increasing far beyond the fourth power of the population and city motors probably as fast if not faster. Yet, in the great majority of cities, practically nothing is being done to survey and develop the capacity of the street system for handling this enormous flood of passenger and freight traffic—for transfer and city destination. Instead, building heights are being forced upwards, which only intensifies the problem. In many cities local transportation is becoming a crucial problem largely due to the interference of these conflicting sources of traffic.

It is becoming apparent that our cities and railroads have many problems in common which would seem to gravitate to two immediate questions of national importance. (1) A metropolitan district transportation plan for the larger industrial districts, ports and gateways. (2) Terminal planning based upon such surveys which will merge into the larger metropolitan plan.

### High Land Values Forcing Terminals Further Out

Generally speaking, the entire terminal system of the country is developed upon a one-story plan except in notable cases like New York and Chicago. In many cities, these terminal lands are strangling the future expansion of the business districts. It is now a serious question of policy whether the roads can afford to retain these expensive properties in their present locations for single-deck freight house and team-track development in the face of their great rental value if intensively developed by the use of the "air-rights" and through the use of the motor truck for collection and

delivery. One Chicago railroad found that it could afford to recede its inlying terminals two or three miles, using motors for hauling all city freight, and still make a profit from the operation, using the present terminals for office, warehouse and loft building development at an additional profit from rentals. Thus it may be that motorizing terminal service may become an interim measure which will largely increase terminal efficiency and release these tremendous land values for further profitable development, more in consonance with the needs of the city and districts wherein they are located.

It is appropriate here to direct attention to the future strategy of more effective use of the immensely valuable railroad rights-of-way entering our city terminal districts. These rights-of-way in many cases are well located for heavy motorways alongside to handle the city freight from the receded freight terminals and also for rapid transit lines from the development of which the railroads may better participate in commuter business and at the same time save the community duplicate investments in parallel rights-of-way for subways and elevated lines which can only be procured today at a tremendous cost for land condemnation and damages. By such a joint plan it seems clear that very large savings in both capital and operating expense could be made for the benefit of all, and more important still, such accommodation of rapid transit facilities would relieve the railroad from the heavy capital burden of maintaining monumental passenger stations for a type of business which should be carried on through rapid transit rails with their stations distributed through, instead of concentrated at one point, in the business district.

## Street Development in Relation to Terminals

By Jacob L. Crane

Consulting Engineer, Chicago

The problem of economical and convenient handling of railroad terminal business is made up of two elements, the transfer before reaching or after leaving the terminal, and the transfer within the terminal itself. Of the total cost in time and money to deliver people or goods from their point of origin to a railway car, say, at least one-half must usually be assigned to that part of the journey over public streets before the portal of the terminal is reached. Moreover, the field for effecting future economies in the transfer of passengers and goods is more promising in the consideration of better facilities over the city streets than within the terminals themselves.

The total traffic load on the busiest streets of Chicago, varies from 3,000 vehicles and 3,000 pedestrians to 30,000 vehicles and 30,000 pedestrians per day. In Boston the North Station handles about 25,000 through passengers and 70,000 suburban passengers each day, a total of 95,000; the South Station handles a total of more than 125,000 persons daily. It is estimated that one per cent of the suburban passengers and 10 per cent of the through passengers leave the terminal in motor vehicles of one kind or another. Allowing two people to a motor car, this Boston terminal passenger business develops upwards of 4,000 motor vehicle trips and more than 240,000 pedestrian trips each day.

This volume of business is the source of half of all the passenger and pedestrian traffic at certain points in the most crowded streets of Boston, and is the cause of intolerable congestion outside the stations themselves. When it is considered that the peak of this traffic load coincides with the rush hour load of other street business, between 5 and 6 p. m., the importance of terminal traffic is even more striking.

Using the most recent available figures on Chicago pack-

age freight, it is found that about 17,000 tons of freight per working day are handled over team trucks, 7,000 tons are delivered by teams and trucks to outbound freight houses and 5,000 tons are taken by teams and trucks from inbound freight houses, a total of 30,000 tons per day. This figure represents at least 25,000 truck movements per day over city streets. Although there is no peak to this traffic load to coincide with the rush hours, it does continue through those hours, and a large part of it does necessarily move over streets already congested by other traffic, and on those streets, by its own bulk and slow speed, it offers the largest single obstruction to free traffic movement.

One-quarter of all the daily passenger vehicle traffic on the Washington Boulevard bridge (the busiest east and west bridge in Chicago) is made up of the taxicabs going to and from the Chicago and North Western station. More teams and trucks pass over South Water street in and out of the Illinois Central freight terminal in a day than pass along any other street in the City of Chicago. One-quarter of all the pedestrian traffic in downtown Chicago flows to and from the railroad terminals every day.

Important to the anticipation of growth and development of the city are considerations of tendencies in terminal design. The projected intensive business development in buildings constructed over the electrified terminals in Chicago will produce an enormous volume of street traffic of different character and requirements from the terminal traffic proper. The tendency to consolidate terminals and to create general freight stations promises larger volumes of traffic from the sites of the enlarged plants, with a corresponding decrease from the abandoned sites, unless the latter may be developed for other uses.



Branch terminals, through routing, extension of trap car, tunnel, or water transfer, all tend to decrease the traffic load on crowded streets and sometimes to distribute it on less crowded thoroughfares. In fact, this is one good reason for adopting these expedients where the development of terminals has exceeded the capacity of the street system to handle the traffic produced, and the improvement of the street system is impracticable or less economical than the expedients which have been named.

The dominant conclusion of all these considerations is that the street system and terminal system should be worked out together. The common sense necessity of this plan of procedure is further reinforced when the topic of grade cross-

ing elimination is suggested. No program of making safer streets by eliminating grade crossings can be conceived without involving the whole question of terminal location.

There is also an important consideration from the architectural standpoint. The newer railway terminals of North America are easily the handsomest in the world. Their settings, however, are almost without exception so inadequate that the fine architecture is largely wasted because it cannot be seen. The ideal situation for a fine terminal building seems to be on a large plaza opening off special streets which in turn connect with main thoroughfares, and in each case located in full view on the axis of two or more streets, converging on the plaza.

## Federal Valuation

By Edwin F. Wendt

Consulting Engineer, Washington, D. C.

The key to the future success of federal regulation of railroads will depend in large measure upon the valuation of the properties engaged in the service of the public. The Engineering Board of the Division of Valuation of the Interstate Commerce Commission, during its existence of eight and one-half years from May 1, 1913, to October 31, 1921, supervised the work of inventorying the entire 250,000 miles of railroads in the United States.

Having completed the field work of collecting the essential engineering data, the commission proceeded to price the engineering works on the basis of prices as of June 30, 1914. The selection of June 30, 1914, as the pricing date was in some respects an accident. The valuation forces were assembled in the latter part of 1913 and the first part of 1914, and when Order No. 14 was issued it was practicable to collect prices only up to June 30, 1914. The world war had not begun at that date, and many people thought that the economic level of prices as of that time would constitute a fairly stable basis upon which to predicate the present value of railway properties, in so far as rate-making was concerned.

The Interstate Commerce Commission has issued a large number of tentative final valuations. The "final value" of the properties is divided into two parts. A final value is being determined of the railway property "held for and used in the service of transportation," and separately the value for "the property held for purposes other than those of a common carrier." The first is commonly called a value for rate-making purposes, and the second a value of the non-carrier property.

The federal valuation work has reached a stage where it is possible to forecast in a general way the relation of "final value" to the investment accounts of carriers. Obviously the present value of some carriers is higher, and of other carriers lower, than the investment account. However, speaking generally, it is highly probable that the aggregate values of the railroads of this country, including both common carrier and non-carrier property, as found by the Interstate Commerce Commission, will substantially equal the capitalization. The commission in 1920 held in *ex parte* 74 that the tentative final aggregate value of the steam railroads is \$18,900,000,000, and this value, which is the rate-making value, is very close to the investment shown on the books. When the final aggregate value of all common carrier and non-carrier property of the railroads has been determined in accordance with Section 19a of the Interstate Commerce Act, the prospects are, as indicated by the tentative final valuations already issued, that the "present value" will be substantially the present total capitalization.

This being the case, the question is: What will be the

effect of federal regulation upon the future development of railroads? The present value of the property is fundamental in connection with the various phases of public regulation. The commission controls the issuing of future railroad securities by interstate carriers, the regulation of their car supply and distribution, the joint use of terminals, the construction of new lines, and the abandonment of old lines. The commission is required to prescribe rates so as to enable the carriers as a whole, or in groups, selected by the commission, to earn an aggregate annual net railway operating income equal to a fair return on the aggregate value of the railway property used in transportation. The commission decided in 1922 that 5¾ per cent is a fair return upon the aggregate property value of steam railroads. Thus it appears that the value of the property is fundamental, whether the question at issue is a reasonable schedule of rates, capitalization, consolidation, depreciation, recapture of excess railway operating income, joint use of terminals, construction of new lines, or division of joint rates.

The consolidation of railroads into a limited number of large systems is vitally related to valuation. It has not yet been determined how many consolidated systems will finally be approved, but public discussion has centered on 20. Dividing the 260,000 miles of steam roads by 20, shows that the average size of each system, under this plan, will be about 13,000 miles of main line. The discussion so far on the subject of consolidation has proceeded upon the basis of the economies incident to size, bigness or extent, but there has been no discussion of the disadvantages and lack of economy which may be experienced if the systems are too large. It is an important question susceptible of scientific determination whether there should not be, in the interest of the public service, a larger number than 20 railway systems. This phase of the question has hardly been touched so far in the discussion of consolidation.

### Affirmative Duty of Interstate Commerce Commission

There are a number of roads such as the Bessemer and Lake Erie; Buffalo, Rochester & Pittsburgh; and Richmond, Fredericksburg & Potomac, the efficiency and economy of which may not be increased by consolidation, nor their initiative of management and operation fully preserved. Where properties are managed efficiently and economically in the public service, it would not seem to be desirable to force them into a consolidation merely for the purpose of dividing the roads into 20 systems. The subject of consolidation is so great, and involves so many considerations, that the public interest requires its most careful and extended consideration.

The railways of this country are in a period of transition.

Before the passage of the Transportation Act, the control exercised by Congress through the Interstate Commerce Commission was primarily for the purpose of preventing injustice by unreasonable or discriminatory rates against persons and localities, whereas under present conditions the new measure known as the Transportation Act imposes an affirmative duty on the Interstate Commerce Commission to fix rates so that carriers will earn an aggregate annual net railway operating income equal to a fair return. The act also requires the commission to take further important steps to maintain an adequate railway service for the people of the United States. All future regulation is to be based upon

a consideration of the property, its nature, classification, extent, use and value. The railway will find it necessary to maintain adequate technical staffs for the purpose of constantly studying the value of the property in its relation to a reasonable return, division of joint rates, joint use of terminals, capitalization, and other phases of the regulatory problem.

In the future it will be necessary much more than in the past for railway companies to do more work in the line of scientific research, and to submit this data to the commission in order that the provisions of the Transportation Act may be reasonably carried out.

## Transportation and National Development

By J. G. Sullivan

Consulting Engineer, Winnipeg, Man.

In Canada and the United States, we have witnessed the greatest national development in the history of the world and the greatest and most essential factor in that development has been the railroad. Table 1 gives a comparison between the railroad mileage and the population of the United States in the past 100 years.

TABLE 1—RAILWAY MILEAGE AND POPULATION OF THE UNITED STATES

Year	Railway mileage	Population
1830	23	13,000,000
1840	2,818	17,000,000
1850	9,021	23,000,000
1860	30,626	31,000,000
1870	52,922	39,000,000
1880	93,262	50,000,000
1890	166,703	63,000,000
1900	194,262	76,000,000
1910	240,438	92,000,000
1920	252,845	106,000,000

Canadian statistics show a similar growth but for a shorter period. The most striking example of rapid development is in the three prairie provinces of western Canada. Forty-five years ago there were no railways and very little or no export. At present, these provinces are exporting between 200,000,000 and 300,000,000 bushels of wheat annually, to say nothing of the other grains and farm products. The extent of Canada's railway growth and increase in population is given in Table 2.

TABLE 2—RAILWAY MILEAGE AND POPULATION IN MANITOBA, SASKATCHEWAN AND ALBERTA

Year	Railway Mileage	Population
1871	None	50,000
1881	Construction started	102,000
1891	3,443 (1894)	232,000
1901	.....	419,000
1906	6,422 (1907)	809,000
1911	8,061	1,323,000
1916	13,581	1,693,000
1921	15,270	1,956,000

In the *Railway Age* of February 11, 1921, a statement was published giving the railway mileage of the world in 1917 as 706,730 miles. This meant an average increase per year of about 9,000 miles since the beginning of this form of transportation and must have required the expenditure for

construction and equipment of not less than \$50,000,000,000 or \$60,000,000,000 of which a large proportion was financed by private corporations. In Canada, the cash subsidies to railways amount to \$282,000,000, of which the Dominion supplied \$220,000,000, the various provinces about \$44,000,000 and the municipalities about \$16,000,000. The land grants to railways amount to about 46,500,000 acres of land of which the Dominion granted 31,500,000 acres and the various provinces about 15,000,000 acres. Of this land, the Canadian Pacific received 25,000,000 acres. The general subsidy act that was in force for a number of years prior to 1914 provided a bonus for colonization railways of \$3,200 per mile for roads costing less than \$15,000 per mile to construct and a further bonus of one half the cost, more than \$15,000 per mile up to a point where the total bonus would be \$6,400 per mile; that is, a subsidized railway costing \$22,400 or more per mile would receive a bonus of \$6,400 per mile.

This form of assistance in either cash or land grants, resulted in a fairly sound and ample development, but the radical element of the country began a crusade against the alienation of the natural resources or as they termed it, the people's inheritance. The clamor for railway extensions was general and the politician was in a dilemma; the result was that Canadian legislators pledged the credit of the government in the form of guaranteed bonds and railway construction boomed, but when these roads failed to make expenses there was nothing left but for them to be taken over by the government. Today we are burdened with an annual deficit of between \$60,000,000 and \$80,000,000. In two cases, at least, where provincial governments could not induce organized railway companies to build lines they had projected, they persuaded railway contractors to organize railway companies. In these two cases the roads are in the hands of the provincial governments and are not earning operating expenses to say nothing of fixed charges which, in one case, amount to more than \$5,000 per mile.

## Some Disadvantages of Compulsory Consolidation

By Charles A. Morse

Chief Engineer, Chicago, Rock Island & Pacific

The clause in the Transportation Act, calling upon the Interstate Commerce Commission to consider the question of the consolidation of the railroads of the United States into a limited number of systems, not over 20 in number, so arranged as to give competition between systems, and so that the various systems will each, as a whole, earn at fair rates

a fair return on the value of their property, was the result, apparently, of the effort on the part of the railroad administration to hold the railroads of the country in the hands of the Federal Government after the close of the World's War, there being some members of Congress who favored such continuance of Federal control and operation.



It was not realized at the time of the passage of the Transportation Act how disastrous and how expensive the experiment of Government operation had been, nor was it fully realized at that time how far-reaching such operation had been in its after effects upon the railroads and the public.

Developments since that time have shown that the working conditions imposed upon the railroads, to say nothing about the increases in wages that were made, have worked a hardship not only upon the railroads but upon the public and finally culminated in the strike of the mechanical crafts last year against a decision by a wage board which was created by the Transportation Act.

The spirit of paternalism that has gradually developed since the first act to regulate big business and especially the railroads, is the result of that element in human nature that makes everyone who is given a small amount of authority, want to increase that authority indefinitely. Today, no one denies that regulation of great industries is desirable to keep them from developing into monopolies, but Government officers and politicians are not content with regulation limited to that extent. The former crave power and the latter see the opportunity to extend their patronage and thus their tenure of office.

Our greatest danger today lies in this attempt by inexperienced Government officers to dictate the management of the great industries of the nation. The idea as expressed in the Transportation Act, of consolidation of the railroads of the country into artificial groups, is along the same line.

Why should the stockholders of prosperous railroads donate to the stockholders of roads that do not earn a fair return on their stock? It may be claimed that dividends are not affected by this requirement, and literally that is so, but in fact, any surplus over dividends belongs to the stockholders and while it may not be paid out in dividends it is utilized on improvements to the property that enhance its value and permit greater economies in operation, and through this means and the creation of a surplus the dividends are made more certain in bad years. The Biblical saying that "To them that hath shall be given, and from them that hath not, shall be taken away even that which they hath" is particularly applicable to the railroads, for those that can earn a surplus can utilize that surplus in making improvements that will permit cheaper operation, while the roads that cannot earn enough to pay dividends on their stock, not only have no money with which to effect economies, but, owing to their poor credit, have to raise the money required for necessities by short-time loans at a high rate of interest, and they cannot afford to use this high-priced money for refinements that help to lower their operating costs.

About 300 failures are reported per week by Dun's Commercial Agency, which shows plainly that many industries that promised well enough to warrant the investment of the public's money failed to prove successful. Why make an exception in the case of a railroad?

A discussion of the transportation problem cannot be confined to the railroads. The advent of the gasoline engine and its application to the automobile, the motor truck and the passenger bus, with the resulting construction of good roads, and particularly of hard surfaced roads, has injected a new element into the problem that must be given serious consideration. They are today the competitors of the railroads, and will and must be allotted their proper place in the development of the transportation facilities of the future.

Instead of all of the hearings and discussions regarding the consolidation of railroads, it would look as though the more rational thing to do would be to appoint a commission to study the whole transportation problem and see if a proper allocation of the handling of business between motor cars and the railroads could not be worked out whereby the railroads would be relieved of a large amount of unnecessary

train service and the business that is already being handled by them assigned to the motor cars in a regular way, holding them responsible for taking care of that business instead of requiring the railroads to furnish a service that is unnecessary and is not utilized.

Any attempt to consolidate present existing lines would result in too many portions of the consolidated system that would have to be maintained as main lines, and with too many branch lines that would come into the main line at such an angle or from such a direction as to make a back-haul on the traffic.

If the Transportation Act could be amended so as to permit consolidation by railroads, with consent of the Interstate Commerce Commission regardless of the number of systems that ultimately result, and eliminating any preconceived system of consolidation, many consolidations would be made that would be to the best interest of the public and the railroads.

Many railroads are now being operated that should never have been built. Some of these roads are located in communities where they have no other transportation facilities, and where it will work a hardship on the communities if the railroad is abandoned. In such cases, the railroad should be permitted to increase its rates sufficiently to earn a fair return on its value as the community would, as a rule, rather pay such increased rates than to have the road abandoned.

Consolidation of railroads will not reduce the cost of operation; any small saving effected in the salaries of general officers will be more than overcome by the decreased efficiency in handling so large a property so widely scattered out by a single organization and with the handicap of lack of local authority.

What is the matter with the railroads today? Simply a case of strangulation. Take the noose from around their necks and make the crowd stand back and give them air and they will recover. It is not a case that calls for a surgical operation—all it needs is the use of a little common sense.

## Local Terminal Studies

The larger part of the session on Thursday morning was devoted to the presentation of papers describing local terminal studies and projects. The terminal problem in St. Louis, Mo., was described in detail by Charles E. Smith, consulting engineer of that city, who reviewed the exhaustive report of the Engineers' Committee appointed to study the St. Louis-East St. Louis railroad terminals. This report was abstracted in the *Railway Age* of July 8, 1922, page 63.

Following this paper the remainder of the session was devoted to the description of railway terminals under construction or under consideration in Chicago. The terminal project of the Illinois Central in Chicago was described in considerable detail in a paper presented by D. J. Brumley, chief engineer in charge of the Chicago terminal improvements of this road. After tracing the early history of the Illinois Central's location on the lake front and negotiations leading to the project on which construction is now being started, Mr. Brumley presented the essential features of the new passenger and freight terminals, including their electrification. These terminals have been described in the *Railway Age* of July 11, 1919, page 51, October 21, 1922, page 745, and April 28, 1923, page 1065.

Plans for the development of the Dearborn station property of the Chicago & Western Indiana in Chicago were described by F. E. Morrow, assistant chief engineer of the Chicago & Western Indiana (*Railway Age*, January 27, 1923, page 263), while those of the Chicago, Rock Island & Pacific and the New York Central for the development of the La Salle street terminal were presented briefly by Robert H. Ford, assistant chief engineer of the Rock Island. The work now under way in the construction of the passenger

and mail facilities at the Union station, Chicago, was described by J. D'Esposito, chief engineer of the Chicago Union Station Company (*Railway Age*, November 3, 1916, page 803, and February 4, 1922, page 323). William L. R. Haines, assistant engineer, Pennsylvania System, presented a description of the freight station of the Pennsylvania at Chicago (*Railway Age*, August 2, 1918, page 215). Major Rufus W. Putnam, Corps of Engineers, United States Army, described the plans which have been developed for the co-ordination of rail and water terminals in the Chicago district, described the outer harbor improvements at the mouth of the Chicago river, adjacent to the Illinois Central development, and in the southern part of the city and their co-ordination with rail facilities.

## Freight Car Loading

**L** OADING of revenue freight for the week which ended on July 14, totaled 1,019,667 cars, according to the compilation of the Car Service Division of the American Railway Association. This total fell short 2,103 cars of equalling that for the week of June 30 this year, when 1,021,770 cars were loaded, the greatest number for any one week in the history of the railroads, but this was the second time within three weeks that the previous record, which was made during the week of October 14, 1920, at which time 1,018,539 cars were loaded, had been eclipsed.

Including the week of July 14, the million car loading mark has been exceeded in six out of eight consecutive weeks so far this year, the average loading for the six weeks being 1,013,118 cars. In 1920, the million mark was reached only on five occasions and then only in the fall of the year. The average for those five weeks was 1,009,688 cars. The million mark was reached in only two weeks in 1922 but never attained in 1921 or in any week prior to 1920.

Compared with the corresponding week last year the total for the week of July 14 was an increase of 168,991 cars, and an increase of 244,783 cars over the corresponding week in 1921. It also exceeded by a wide margin the corresponding weeks in 1918, 1919 and 1920.

While the number of cars loaded with revenue freight during the week of July 14 this year was an increase, for the

country as a whole, of about 20 per cent over the corresponding week last year, freight loading in the Western districts alone increased 12.4 per cent, and in the Southern district, 9.5 per cent. The increase in the Eastern district, which includes the Pocahontas district, was 29.3 per cent due partly to curtailment in coal loading last year because of the miners' strike.

Compared with the preceding week this year, when, however, loadings were reduced by the observance of Fourth of July, the total was an increase of 164,919 cars.

From January 1 this year to July 14, inclusive, 25,887,240 cars were loaded with revenue freight. This was an increase of 4,309,272 cars or 20 per cent over the corresponding period last year, and an increase of 5,785,900 cars or 28.8 per cent over the corresponding period in 1921. It also was an increase of 2,676,475 cars or 11.5 per cent over the corresponding period in 1920. In making comparisons with last year, however, consideration must be given to the fact that coal shipments were curtailed by the miners' strike which began on April 1, while on July 1 a strike of railway shopmen also went into effect, both continuing until early fall.

A new high record in the number of cars loaded with ore was made during the week of July 14 when the total was 89,298 cars. This was the largest number of cars loaded with that commodity during any one week on record. The previous record was made during the week of September 15, 1920, when the total was 84,789 cars. Compared with the preceding week, the total for the week of July 14 was an increase of 15,702 cars, and with the corresponding week last year, it was an increase of 19,853 cars. It also was an increase of 57,899 cars over the corresponding week two years ago. Loading of merchandise and miscellaneous freight, which includes manufactured products, totaled 577,114 cars for the week of July 14. This was an increase, due to the holiday, of 80,317 cars over the preceding week, while it also was an increase of 19,026 cars over the same week last year. Compared with the same week in 1921, it was an increase of 114,203 cars.

Coal loading amounted to 193,831 cars, an increase of 33,613 cars over the preceding week. This also was an increase of 116,734 cars over the corresponding week last year, when, however, the miners' strike was still in progress. It also was an increase of 42,543 cars over the same week two years ago.

### REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY, JULY 14, 1923

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded		
										Corresponding period		
										1923	1922	1921
Eastern	1923	6,746	3,226	54,869	3,718	6,278	10,375	66,041	92,789	244,042	.....	.....
	1922	10,714	3,166	7,756	1,838	5,556	7,110	69,821	28,660	.....	194,621	187,705
Allegheny	1923	2,166	2,884	60,172	7,288	3,577	15,932	48,542	84,673	225,234	.....	.....
	1922	3,128	2,427	15,956	4,483	2,977	11,656	50,063	77,799	.....	168,489	153,898
Pocahontas	1923	235	177	29,578	530	2,026	363	6,242	4,991	44,142	.....	.....
	1922	256	215	22,174	272	1,416	62	5,336	4,202	.....	33,933	31,650
Southern	1923	3,623	2,136	22,627	1,245	23,124	1,744	38,294	37,773	130,566	.....	.....
	1922	4,862	2,548	16,004	880	19,110	1,191	36,161	38,521	.....	119,277	108,740
Northwestern	1923	9,017	9,562	9,372	1,204	16,868	57,458	31,393	37,857	172,731	.....	.....
	1922	10,454	8,749	7,215	1,672	13,791	47,050	30,337	37,754	.....	157,022	113,877
Central Western	1923	12,570	11,832	13,110	384	11,722	2,982	35,400	53,435	141,435	.....	.....
	1922	13,723	10,520	5,244	390	7,772	2,044	35,191	48,754	.....	123,638	116,627
Southwestern	1923	6,058	2,909	4,103	146	8,173	444	14,795	24,889	61,517	.....	.....
	1922	5,458	2,456	2,748	161	7,052	332	13,711	21,778	.....	53,696	62,387
Total western districts	1923	27,645	24,303	26,585	1,734	36,763	60,884	81,588	116,181	375,683	.....	.....
	1922	29,635	21,725	15,207	2,223	28,615	49,426	79,239	108,286	.....	334,356	292,891
	1923	40,415	32,726	193,831	14,515	71,768	89,298	240,707	336,407	1,019,667	.....	.....
Total all roads	1922	48,595	30,081	77,097	9,696	57,674	69,445	240,620	317,468	.....	850,676	.....
	1921	57,183	24,467	151,288	3,807	43,829	31,399	211,163	251,748	.....	.....	774,884
Increase compared	1922	.....	2,645	116,734	4,819	14,094	19,853	87	18,939	168,991	.....	.....
Decrease compared	1922	8,180	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Increase compared	1921	.....	8,259	42,543	10,708	27,939	57,899	29,544	84,659	244,783	.....	.....
Decrease compared	1921	16,768	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July 14	1923	40,415	32,726	193,831	14,515	71,768	89,298	240,707	336,407	1,019,667	850,676	774,884
July 7	1923	31,069	25,122	160,218	13,770	54,176	73,596	209,480	287,317	854,748	707,025	640,535
June 30	1923	37,127	30,679	185,757	14,745	79,249	80,791	244,921	348,501	1,021,770	862,845	776,079
June 23	1923	33,958	29,251	183,350	14,828	78,068	82,041	240,403	340,841	1,002,740	866,321	775,447
June 16	1923	33,903	28,461	187,009	15,167	78,058	79,298	241,947	343,410	1,007,253	848,657	775,328

Compiled by Car Service Division, American Railway Association.



Loading of grain and grain products totaled 40,415 cars, an increase of 9,346 cars over the week before, but a decrease of 8,180 cars under the corresponding week last year. This also was a decrease of 16,768 cars under the same week two years ago.

Live stock loading amounted to 32,726 cars, an increase of 7,604 cars over the week before, and an increase of 2,645 cars over the same week last year. Compared with the same week in 1921 it was an increase of 8,259 cars. Loading of forest products totaled 71,768 cars, an increase of 17,592 cars over the preceding week. Compared with the same week last year this was an increase of 14,094 cars, and with the same week two years ago, an increase of 27,939 cars. Coke loading amounted to 14,515 cars, an increase of 745 over the week before. Compared with the same week last year this was an increase of 4,819 cars, and with the same week two years ago an increase of 10,708 cars.

Compared by districts, increases over the week before in the total loading of all commodities were reported in all districts, while all districts reported increases over the corresponding week last year. Except for the Southwestern district, all districts showed increases over the corresponding week in 1921.

The railroads of the United States on July 14 had 84,210 surplus freight cars in good repair and immediately available for service if transportation conditions warranted, despite the fact that for the week which ended on that day a total of 1,019,667 freight cars were loaded with revenue freight, the second largest number for any one week in the history of the country. The previous record loading was established during the week which ended on June 30 when the total was 1,021,770 cars, and on which date there were 63,636 surplus freight cars. When the previous freight loading record was made during the week of October 14, 1920, the total for which was 1,018,539 cars, there were only 2,188 surplus freight cars, while there was a shortage of 69,517 freight cars.

The total number of surplus freight cars on July 14 was an increase of 20,143 over the number on July 8. Surplus box cars in good repair numbered 64,692, an increase within a week of 21,771, while surplus coal cars numbered 4,865, an increase of 245 within the same period. Surplus refrigerator cars totaled 8,074, an increase of 70 over the total number on July 8, but there was a decrease of 1,949 in the number of surplus stock cars which brought the total on July 14 to 5,702.

The reported shortage in freight cars on July 14 totaled only 5,574. This was an actual decrease since July 7 of 1,314 cars despite the record loading of revenue freight. Shortage in box cars on July 14 was only 1,047, a decrease of 214 within a week, while the shortage in coal cars was 2,700, a decrease of 1,167 within the same period.

THE BOARD OF DIRECTORS of the St. Louis Chamber of Commerce has adopted resolutions to the effect that the vital public interest demands that the regulatory provisions of the Transportation Act of 1920 be given a full and fair trial, without amendment, for the next two years. The resolutions declare that the regular, expeditious and seasonable movement of traffic is the paramount function of transportation; that the interest of every citizen is involved in the economic exchange and distribution of commodities; that the railroads are replenishing their equipment to a marked degree and moving a maximum tonnage, more to the satisfaction of the shipping public than ever before; that the Interstate Commerce Commission now has authority so extensive that it can adjudicate on legally ascertained facts any controversy pertaining to the important features of transportation; and, that any legislation tending to destroy the railroads' initiative, or weaken their credit, is inevitably reflected in industry and is followed by a general stagnation of business.

## Labor Board Hears Pleas for Wage Increases

HEARINGS ON THE REQUESTS of the Brotherhood of Railroad Signalmen and the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees for general increases in wages on a large number of roads operating in all sections of the country were held by the Labor Board on July 19 and July 23, respectively. The restoration of the rates in effect May 1, 1920, under the provisions of Labor Board decision No. 2, was sought by the Brotherhood of Railway Clerks. E. H. Fitzgerald, vice-president of the organization, presented arguments along the same lines as have been advanced at nearly every hearing before the Labor Board. He justified the request for large increases at this time by claiming that the cost of living has materially increased and that clerical and station employees represented by his brotherhood were unable to live without want while receiving wages under the present scale. Mr. Fitzgerald contended that the increase in traffic during the past year has rendered the roads capable of meeting the request for the advances without jeopardizing them financially.

### Labor Board Hears Pleas for Wage Increases

J. W. Higgins, speaking for the western railroads as a group, testified that canvasses of the local situations as to rates of pay along the various western lines have indicated that there has been no material increase in wages for clerical help in outside industries in the west and south. In closing his remarks, Mr. Higgins said: "The factors named in law (Transportation Act, 1920) have not changed since decision No. 1621, March 1, 1923, to warrant any changes in wages, and inequalities due to previous wage orders were settled by it and prior decisions after all factors and conditions had been considered by this board. That there are several rates in one office or that rates vary as between similar offices at several stations does not prove that inequalities exist. It may mean, and in over 90 per cent of the cases that have come under my observations it does mean, that the rate for each position has been adjusted carefully to its duties and responsibilities.

"As I said in opening, decision No. 1621 denying these rates, was less than one month old when the same rates were immediately requested of the railroads and are again before you within a very short time. There can be no stability or composure of railroad service under conditions that keep the wage question in a fluid state by disregarding or ignoring the fact that the board's decisions are based on existing conditions. We should have composure in the minds of railroad men in order to do good work and best serve those who are dependent on the railroads and that includes all other industries and all our people. To do this we must have no chronic disputes; service must be composed and stable. The life of a decision should parallel that of a wage agreement. Wage agreements run for a minimum of one year and thereafter until changed conditions warrant revision of the rules.

"We respectfully urge you to sustain your decision No. 1621 and bring peace to the service by discountenancing the continuous agitation of questions after they have been disposed of by due process before this board."

Following Mr. Higgins' presentation, representatives of the individual roads submitted statements relating to the local conditions on their lines.

### Signalmen Heard by Labor Board

On July 19 the Brotherhood of Railroad Signalmen, representing employees on a number of Class 1 roads, appeared before the board, asking for rates ranging from \$1 an hour for gang foremen to 60 cents an hour for helpers. D. W.

Helt, president of the brotherhood, presented the case of the employees. He contended that the cost of living has increased and that men employed in other industries and performing work similar to that done by signal department employees on the roads are receiving correspondingly higher rates.

Speaking for the western carriers, J. W. Higgins, executive secretary of the Association of Western Railways, pointed to the figures compiled by the United States Department of Labor indicating that the cost of living has been practically stationary for many months. The relation of railroad signalmen's wages to wages in outside industries, Mr. Higgins said, had already been declared irrelevant both by the roads and the signalmen's organization in previous discussions. Any general inequalities in wage scales were declared to have been eliminated by the board in its decision on February 21, 1923, when it granted second class signalmen an increase of four cents an hour.

### Two Significant Decisions

During the past week two decisions of particular interest and significance have been handed down by the Labor Board. In decision No. 1894 regarding a dispute between the Order of Railroad Telegraphers and the Toledo, St. Louis & Western, the board declared for the carrier. In this case the road had reduced the wages of its telegraphers to the scale effective under decision No. 147, which was handed down on July 1, 1921, notwithstanding the fact that it had not been a party to that decision. The employees declared that this reduction was unauthorized because it was not agreed to in conference and was not authorized in any decision of the board to which the carrier was a party. Although the board declared that it did not approve or condone this practice, it found that if the Toledo, St. Louis & Western had been before the board it would have been granted the same relief as the other roads. The board, therefore, ordered that the rates of pay put into effect by the management should not be set aside. This decision appears to open the way for roads who are not parties to wage reduction cases to benefit by any relief that the board may grant.

The Labor Board also held that the Erie has violated one of its decisions and is "wilfully and knowingly persisting in such violation in contempt of the opinion expressed in a decision and in contravention of the public welfare" in its decision No. 1920 lately made public. This proceeding was the result of contentions of the American Federation of Railroad Workers that the Erie had violated decision No. 1219. This ruling held that the road had violated both the Transportation Act and decisions of the board in contracting for certain of its work with the Lincoln Engineering Corporation and instituting lowered rates of pay. Representatives of the employees stated in a written communication to the board on December 28, 1922, that officials of the Erie had continued the practice of contracting for work with a reduction in wages.

The position of the Erie was stated in a letter by W. A. Baldwin, vice-president, under date of February 5, 1923, which read in part as follows: "I would advise that as stated at the time of the hearing in this case and other similar cases the position of this company is that the jurisdiction of the United States Railroad Labor Board under the statutes does not extend to contracts between the carrier and contractors whose employees work on the railroads, nor to such employees of contractors. It is the carrier's position, therefore, that the order in this case is beyond the statutory jurisdiction of the Labor Board."

In its opinion on the case, the Labor Board held that the Erie had put into effect the rates of pay effected by decision No. 147 and could not subsequently reduce these scales, although it could have refused to abide by the decision when

rendered. In conclusion the opinion read: "When the carrier arbitrarily reduced the wages of these employees as fixed by decision No. 147, for several months effective on its property, it violated the Transportation Act and rendered itself liable for a money recovery to every employee who suffered such injury." This decision opens the way for a large number of suits by employees to recover wage losses.

### Recent Wage Actions

A number of further wage advances have been negotiated during the past week. Increases effecting 9,000 men and amounting to approximately \$320,000 annually have been granted shop workers on the Missouri Pacific. A general raise of two cents an hour was given all mechanics, such as machinists, boiler makers, blacksmiths, sheet metal workers, passenger car builders and repair men, car inspectors and car carpenters, and one cent an hour to helpers and apprentices. The negotiations were conducted with men who represent the local organization of shop workers on the Missouri Pacific. This organization is not affiliated with the Federated Shop Crafts.

The Maine Central has approved an increase of 1½ cents an hour to crossing watchmen and three cents an hour to coal handlers, enginehouse watchmen and enginehouse laborers. Leading signalmen and leading maintainers, signalmen and signal maintainers, assistant signalmen and maintainers and helpers on the Delaware, Lackawanna & Western have been granted an increase of three cents an hour. A similar increase to the same classes of employees was approved by the Buffalo, Rochester & Pittsburgh.

Additional submissions to the board for wage increases have been made by the American Train Dispatchers' Association against the Denver & Rio Grande Western, the Los Angeles & Salt Lake and the Southern Pacific. The rates requested on the Denver & Rio Grande Western are \$350 a month for chief dispatchers, \$340 a month for assistant chief dispatchers and \$300 a month for trick dispatchers. Slightly lower rates were asked on the other roads.

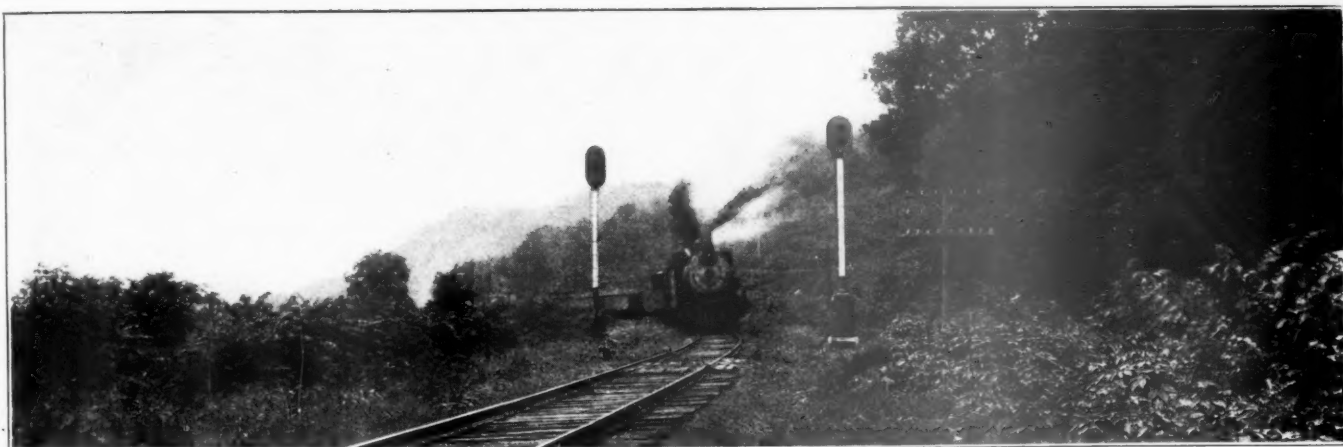
Maintenance of way employees on the Midland Valley have been granted increases ranging from one to two cents an hour. On the Hocking Valley, 1,200 workers in the maintenance of way department received advances averaging between two and three cents an hour, the total annual increase being \$97,800.

The Cleveland, Cincinnati, Chicago & St. Louis has increased the wages of employees in the signal department to the following rates: Maintainers, 75 cents an hour; assistant maintainers 66 cents; signalmen 66 to 75 cents; helpers 51 cents an hour. Additional submission have been made to the Labor Board by the Order of Railroad Telegraphers on behalf of members on the Chicago Rock Island & Pacific and the Western Pacific. On the Rock Island a flat increase of ten cents an hour for all positions is asked for while on the Western Pacific the request is for increases ranging from eight cents an hour to 23 cents an hour.

THE PERE MARQUETTE has been given permission by the Interstate Commerce Commission to install automatic train control apparatus on a locomotive division between Alexis, Ohio, and Romulus, Mich., in lieu of the installation designated in the commission's order of June 13, 1922.

THE AVERAGE MILES per freight car per day on the Missouri Pacific during June rose to 28.86, compared with an average of 24.35 in June, 1922. A total of 617,396 cars were moved over the system during the month, which is an increase of 91,520 over the same month last year. The chief increases were in local loadings of lumber, livestock, commercial coal and oil. Local loadings on the system totaled 78,224 cars which was an increase of 6,744 cars over the corresponding months last year.





*Train Passing Three Unit Light Signal Approaching Passing Track Switch*

## C. B. & Q. Installs New Light Signals

Burlington Standard System of Home and Distant Indications Carried Out With Colored Lights

**A**N INSTALLATION of color light automatic block signals has just been completed on 26 miles of single track on the Chicago, Burlington & Quincy between Hannibal, Mo., and Louisiana. This is the first installation of light signals to be placed in service on this road, although three other stretches are under construction at this time. Storage

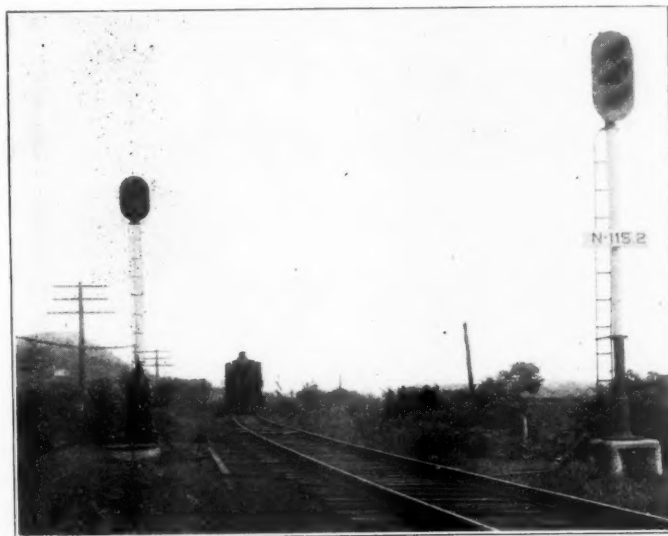
throughout, but in following the river there is a continual succession of sharp curves with the view shut off frequently by the bluffs. Therefore, in addition to the increased track capacity gained by permitting closer headway of following trains, the signal installation also introduces greater safety of train operation.

There are sidings and manual block stations with lock and block instruments at both Hannibal, at the north, and at Louisiana, at the south end of the installation, and the same facilities are located at the intervening stations of Saverton, Reading and Ashburn; there is also a passing siding at Hope. The comparatively long spacing of block offices was an additional cause of delay, and an added incentive for the installation of automatic signals.

According to the usual practice on the C. B. & Q., the locations for these signals were selected carefully by the signal department in conjunction with the operating department. They were first laid out on a plan giving the alinement and profile, after which these locations were marked on the ground, and a trip was made over the territory by a representative of the signal department, with the division superintendent. If, in the opinion of the latter, any changes were advisable in the locations, they were made at that time, and then the final plans were made.

The C. B. & Q. has been installing A. P. B. automatic block signals on single track lines since 1912, and is fully convinced that their use increases the capacity of the line at least 25 per cent. Some of the most obvious advantages that have been demonstrated from their use are that passenger trains are allowed to follow each other with a space interval of practically half that under the manual block system; that freight trains are allowed to follow passenger trains when the latter have gone half way between stations instead of waiting until the next station in advance is passed, and that trains waiting at meeting points are, by the action of the starting signal ahead of them, advised as soon as the trains which they are to meet have passed the next station in advance. This gives the crews advance information and enables them to be ready to pull out just as soon as opposing trains pass. The amount of time saved in this way is considerable.

Again, the dispatchers like the signals because they are



**Train Leaving Siding, Accepting Absolute Head Block Signal**

batteries, charged by vibrating rectifiers, are used as a source of energy.

This 26 miles of single track is a very busy section of the main line from St. Louis to the north and west. Twenty-three time-table trains, and from 8 to 10 extras are operated over this section daily, and during the heavy traffic season approximately 35 freights and 14 passenger trains have been handled. This traffic caused considerable congestion, and it was decided to install automatic signals in order to increase the track capacity. The section from Hannibal to Louisiana was chosen for the first installation on this division, because an extra train serving several large industries, is operated between these points. This line is built at river grade

able to get more accurate information about the movement of trains from the operators. For instance, if one station is closed, the dispatcher asks the operator at the adjacent open station to watch the starting signal, and advise him when it goes to block. This feature is found so convenient that it is the practice to put indicators in the offices of the operators at stations where the starting signals cannot be seen to repeat the position of the starting signals.

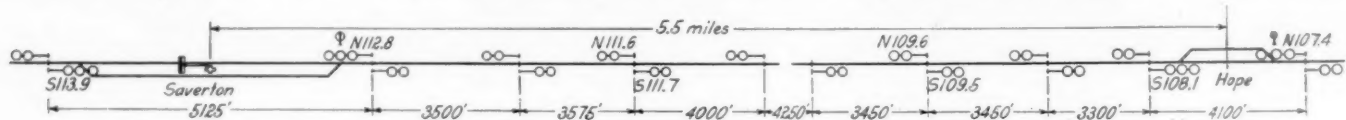
#### Home and Distant Indications

##### Continued with Light Signals

The introduction of light signals on the Burlington is of special interest due to the fact that all of the automatic block signaling installed previously uses the separate home

"proceed" indication. A yellow light is shown only at a distant signal and indicates "approach home signal with caution." A red light is shown only at a home signal and indicates "stop."

It should be noted that where two home signals governing movements in the same direction are relatively close together, as for instance at the entrance to, and exit from a station, the distant indication for the second signal is given by a third light on the preceding home signal, i.e., the yellow indication is given by a third light unit, while if the block is clear, the green indication of the first home signal may be considered as a clear distant indication for the next signal also. On all two-light signals, the green light is above the red light, but on the three-light signals, the yellow is on top, the



Track and Signal Plan Between Sidings, Showing Burlington System of Home and Distant Signaling

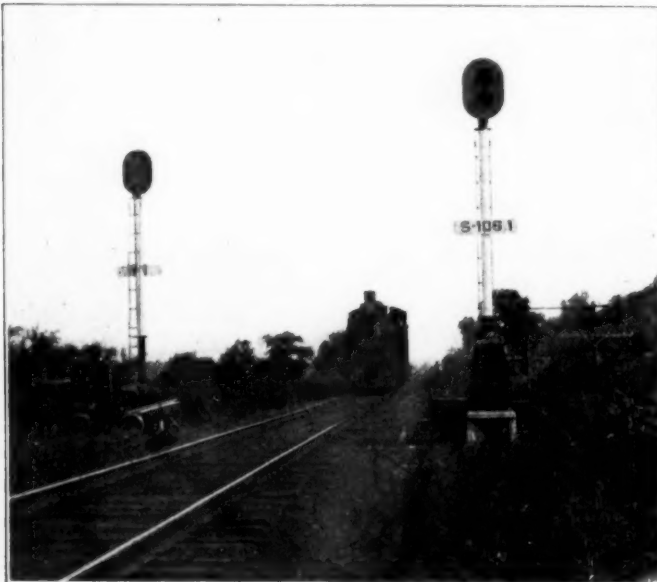
and distant signals with separate two-position semaphore arms operating in the lower quadrant for each indication. This same principle of home and distant arms is carried out with the new color light signals. The night indications of the semaphore signals and the new light signals, are the same; the light signals simply carrying the former night indications throughout the day also. Therefore, no new operating rules are necessary for the movement of trains with the new signals.

The absolute permissive block system for single track provides for an absolute stop indication for opposing moves be-

red in the center, and the green on the bottom. This order allows separation of the green and the yellow by a position distinction.

The underlying principle of this home and distant system of signal indications is that the distant signal is located at the proper point at which, provided the distant indication is caution, the engineman must take action immediately in order to control his train for a normal train stop at the home automatic signal, thus eliminating the chance of his over-running the home signal through forgetfulness.

The installation includes 45 two-unit light signals, and 18 three-unit light signals. The signals are the Federal color light type E, each light unit being in a separate compartment with a separate door. However, the units are all in one cast iron case which fits over the top of the 5-in. pipe signal post. The signal has a sighting device which, together with a set of adjustable bolts, allows the entire light signal to be aligned at one setting.



Double Location Intermediate Home Signals

tween sidings and a permissive indication for following train movements. The signals at the leaving ends of stations, governing the entrance to a block, are absolute stop signals and carry no number plates, but the intermediate permissive signals carry number plates.

The absolute signals, and also the intermediate home automatic signals, have a red light to indicate "stop" and a green light for the "proceed" indication. Located approximately 3,000 ft. from every home signal, is a distant signal with a green light to indicate "proceed" which conveys the meaning that the home signal is at "proceed," and a yellow light for "caution," conveying the meaning that the home signal is at "stop." Only one light is shown at any signal at one time. A green light at either the distant or the home signal is a

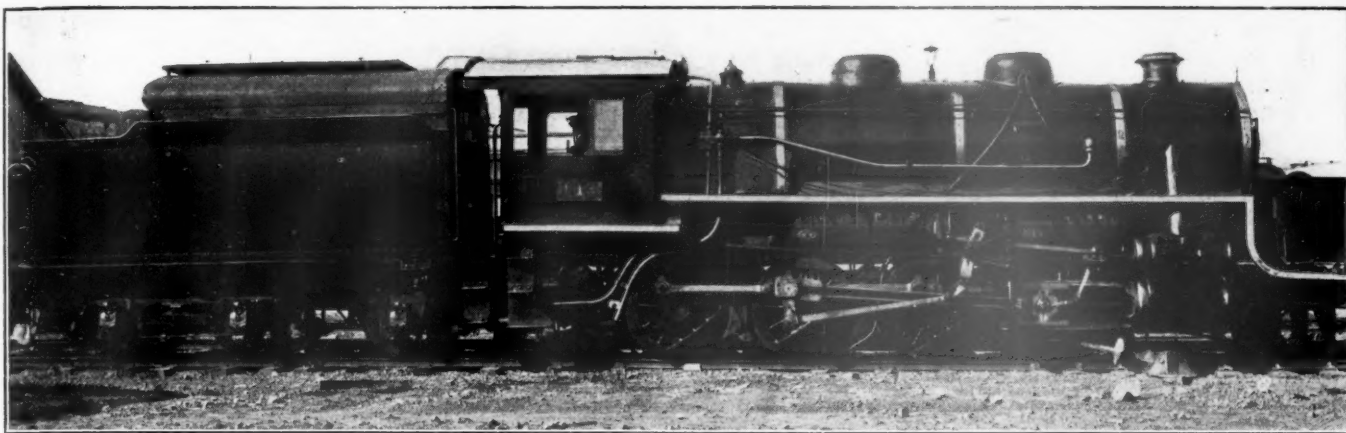
FREIGHT CLAIM PAYMENTS on the Baltimore & Ohio in May amounted to \$148,746, or 0.757 per cent of the freight revenue which was \$19,649,633. From January 1 to May 1, 1923, the freight claim payments were \$735,588, or 0.822 per cent of the freight revenue which was \$89,495,436, as compared with freight claim payments amounting to 1.365 per cent of the freight revenue for the first five months of 1922.



Kadel & Herbert

An American Electric Locomotive in Japan





*The First Locomotive in the Japanese Empire to Burn Pulverized Coal*

## Pulverized Coal for Locomotives in Japan

Problem of Burning Low Grade Fuel in the Isle of Taiwan  
Was Solved by American Equipment

**T**AIWAN (FORMOSA), the treasure island of Japan, which a few years ago was unexplored and inhabited by a fierce race of savage headhunters is now a progressive and prosperous country. The large tracts of



*The Method of Coaling Hand-Fired Locomotives in Formosa*

virgin forest and mineral wealth have caused the name of Treasure Island to be bestowed upon it.

There are immense deposits of fairly good quality coal, but it has not been satisfactory for use on locomotive grates owing to its tendency to crumble, form clinkers and honey-comb on the flue sheets. These burning characteristics have prevented the use of anything but the best of the coal on locomotives. Native women sift the coal by hand, separating the lump from the screenings. The former is used for locomotives and the latter for small power plants and domestic purposes. Sifting has increased the cost of the coal.

Although the best of the lump coal is now used on the

hand-fired locomotives, the results are not satisfactory from several standpoints. In the first place, the coal crumbles and falls through the grates. The method of firing found to be most satisfactory necessitates the use of two firemen. Their instructions are "fire light and often and keep the holes covered." The fireman has to close the fire door after each shovelful and uses a coal shovel which holds only two pounds. Although this careful method of firing prevents slugging



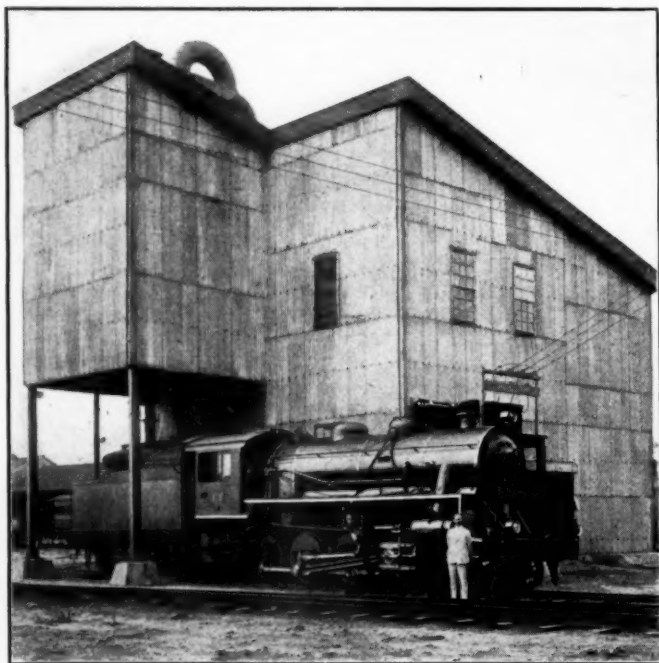
*Condition of the Brick Arch in Pulverized Coal Fired Locomotive on an Imperial Taiwan Railroad Locomotive, After 30 Days' Service*

and some waste of coal, it does not lessen greatly the seriousness of the fuel problem and it increases the labor cost.

Another disadvantage was the emission of cinders, sparks, and smoke from the stack. This not only represents a loss of fuel, but is objectionable from the standpoint of the passengers. This is particularly serious in Japan because of the numerous tunnels necessitated by the mountainous character of the country.

The Imperial Taiwan Railroad is progressive and had its engineers carry on extensive investigations in an effort to find some more efficient method of firing locomotives. The question of electrification was also taken up. Taiwan is very mountainous; in fact, it has the highest peak in the Japanese Empire. There is plenty of rainfall and the well-preserved forests prevent floods and cause a reserve of water supply throughout the year. Consequently, it was thought that one hydro-electric power plant located at about the center of the island could supply the whole island with more power than it needed. However, the high first cost has eliminated this project for the present, or at least until the screenings and low grades of coal have been utilized. The alternate plan was to find some method of burning the large amount of screenings and poor grade coal available. These investigations led to the consideration of burning this coal in pulverized form.

In the early part of 1921, three Lopulco equipments for locomotives and one complete set of equipment for the pul-



Pulverizing Plant and Coaling Station at Taihoku, Formosa

verizing plant were ordered from Mitsui Bussan Kaisha, Ltd., the foreign agents for the Combustion Engineering Corporation. The first locomotive was put into operation on October 15, 1922.

This locomotive was put in service between Taihoku and Keelung, a distance of 18 miles, over which the running time was 1 hr. 2 min., with six stops to switch out and pick up cars. Four round trips, or 144 miles a day, with switching at stops are considered a day's work over this division. Later the locomotive was put in service between Taihoku and Shinchiku, a distance of 45 miles. Here the running time is 2 hr. 45 min., with 12 stops to switch out and pick up cars. Two round trips, or 180 miles, with switching at the stops are considered a day's work over this division.

After due trial, the pulverized fuel-equipped locomotive demonstrated that the screenings and low grades of coal could be efficiently used. As a direct result, two more Lopulco equipments were ordered by cable, and at the present time there are, either in operation or in the course of erection, seven locomotives in the Japanese Empire equipped for burning pulverized coal—more than were ever used by the American railroads at any one time.

The locomotives operate on a track of 3-ft. 6-in. gage and

have a total weight of 133,900 lb., of which 117,400 lb. is on the drivers. The boilers carry a steam pressure of 180 lb. per sq. in. They have a total heating surface of 1,758 sq. ft., of which 345 sq. ft. is in the superheater, and there is a grate area of 33.9 sq. ft. The cylinders measure 20 in. by 24 in. and the drivers are 49 in. in diameter. The tenders have a water capacity of 2,700 gals. and 5 tons of coal.

The coal now used on the hand-fired locomotives costs in American money \$6.65 a ton, while the screenings used on the pulverized fuel-fired locomotives costs \$4 a ton. This means a saving at the outset of 40 per cent in the coal bill. In addition to this, a saving of 50 per cent is made in the coal used in firing up, the standby losses are reduced to a minimum and there is a 15 per cent saving in coal burned when pulling the train. Another big saving is effected by the elimination of one fireman.

At present the hand-fired locomotives are coaled by coolies who carry the coal in baskets from the coal car to the tender. At first thought this might appear to be a very expensive method of handling the coal, but the wages of the men are about 8 sen (4 cents) an hour, so this is really not very expensive. When using pulverized coal, however, there is even a saving in this cheap labor as only three men are required to dump the coal car and look after the pulverizing plant while there are about 16 men required to handle the coal for the hand-fired locomotives.

The illustrations show the type of locomotive on which the equipment has been installed, the methods used in coaling the hand-fired locomotives and the pulverizing and coaling plant installed at Taihoku, which is situated between the 18-mile and 45-mile operating districts.

## Annual Report of Freight Container Bureau

THE Freight Container Bureau of the American Railway Association has now been in operation more than two years, and Colonel B. W. Dunn, chief engineer, has issued his first annual report, including the data contained in a preliminary report made last year. Colonel Dunn is chief inspector of the Bureau of Explosives; and the Freight Container Bureau was started in connection with the work of the older bureau; but is being enlarged so that it is an organization of itself.

The work was begun by making studies of the construction of boxes for boots and shoes and for eggs, crates for furniture and other cognate subjects. The present report consists largely of accounts of studies on cordage, wrapping paper and egg cases and the use of impact registers. An illustrated report on experiments with the Savage impact register (which was described in the *Railway Age* of February 3, 1923, page 344) fills 10 pages.

Eight engineers are now engaged in the work of this bureau, and a recommendation has been made that the American Railway Association appropriate \$75,000 a year for the work, which would provide for the employment of 12 engineers.

Much of the work that has been done has been of a pioneer character and innumerable conferences have been held with makers of boxes, with shippers using large numbers of containers, and with trade organizations of all sorts. Addresses have been made before interested associations to the number of 35, and 400 inspections have been made at factories, railway stations and other places.

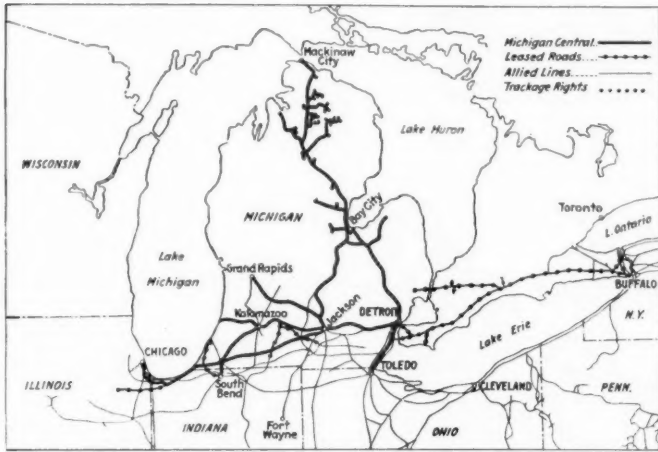
The president of the bureau is N. D. Maher, president of the Norfolk & Western Railway, and the secretary is J. E. Fairbanks, 30 Vesey street, New York City, general secretary of the American Railway Association. Colonel Dunn's chief assistant in the Freight Container Bureau is G. E. Carleton.



# Michigan Central Earns \$12,818,271 After Charges

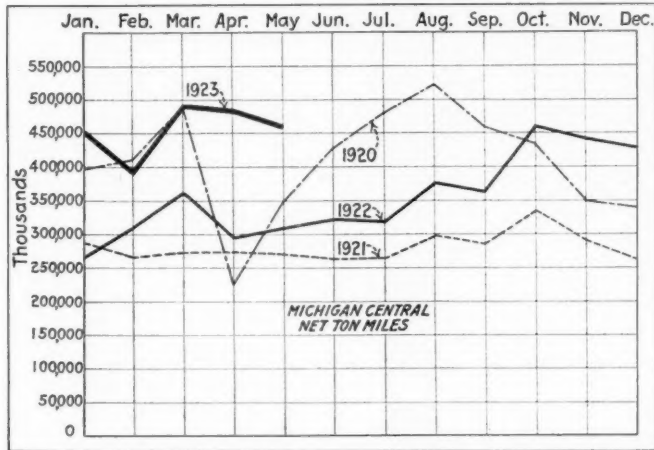
Net Operating Income for First Five Months of 1923  
\$1,000,000 Over Annual Net for Test Period

**A**N ELEMENT in the study of the economics of transportation that merits more attention than is usually given to it is the consideration of the effect of the buying power of a railroad's territory as distinguished from the effect on the railroad's earnings of the traffic which that territory originates. If a study of this feature were to be made, one of the most interesting examples that could be



The Michigan Central

analyzed is the present or recent status of the Michigan Central. The increasing prosperity of this property and the evidence of its consistently expanding earning power make the situation of the Michigan Central one of the brightest spots in present day railway conditions. Michigan Central prosperity has, of course, resulted from the localization of



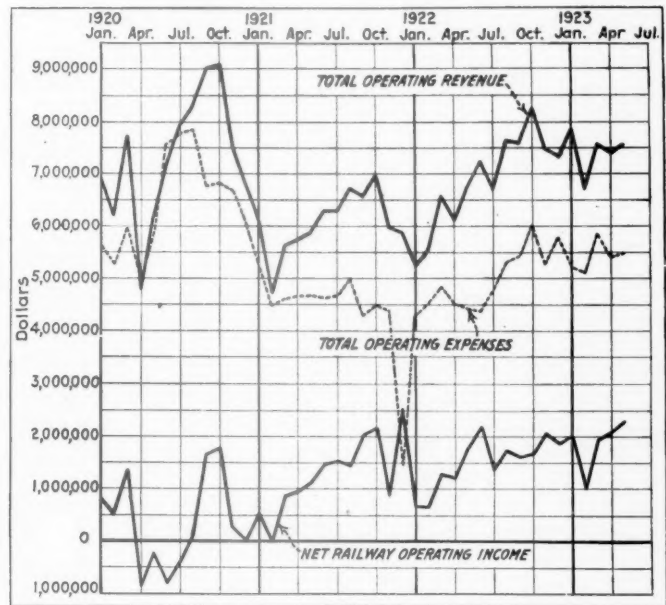
Michigan Central Traffic

the automobile manufacturing industry in the southern part of the state of Michigan and from the phenomenal growth which has taken place in that industry. The leading traffic originated in the Michigan Central territory would be expected to be automobiles or autotrucks. Automobiles, however, as it happens, constitute a comparatively unimportant proportion of the Michigan Central revenue tons or revenue ton miles. In 1922, an extremely good year in the automo-

bile industry, they furnished to the Michigan Central 125,050 cars of the total of 2,661,895 cars and but 876,341 tons of a total of 86,077,233. On the other hand, the raw materials for the industry—steel, fuel and the many miscellaneous commodities used in automobile manufacture—constitute a very imposing share.

Even at that it would be interesting to make an analysis, were it possible, of the comparative importance of the raw materials and finished products of the automobile industry in Michigan Central traffic as compared to that vast volume of miscellaneous tonnage originating from the other industries in the territory or moved in to fill the needs of the rapidly expanding population brought into the state by the development and growth of its major industry.

However the facts might be developed in an analysis such as the one here suggested, the fact is that of late the automobile industry has been the most prosperous of all of the industries of the country. The effect on the Michigan



The Low Operating Expenses in December, 1921, Result from a Credit to the Maintenance Accounts Caused by the Elimination of Maintenance Equalization Reserves Established in 1920.

Michigan Central Gross and Net

Central has been such that in 1922, the road had a net operating income equivalent to considerably over twice its standard return. Net after fiscal charges in 1922 was \$12,818,271, compared with \$7,725,337 in 1921. Net operating income of \$18,066,109 compared with an average net operating income for the three years ended June 30, 1917—in other words the standard return—of \$8,052,127. For the first five months of 1923 the Michigan Central earned a net operating income of \$9,409,272, a figure for but five months over \$1,000,000 in excess of the annual average for the test period. The five months' figure for 1923 compared with \$5,537,773 for the first five months of 1922. For 1922 the Michigan Central operated with a ratio of 71; in May this ratio was 64; for the first five months of 1923, 67.5. Further evidence of present Michigan Central prosperity is contained in the fact that the road is now paying 10 per cent semi-annual divi-

dends. In 1922 its dividends totaled 14 per cent or \$2,623,096, after the payment of which there was a surplus for the year of no less than \$10,195,175.

On December 31, 1922, the New York Central owned 174,375 shares of the Michigan Central stock, 93.06 per cent of the total outstanding. The Michigan Central is, of course, one of the most prosperous parts of the prosperous New York Central system. It gives the parent company a large volume of the lucrative traffic which it originates. It provides it also with an economical alternative route between the Niagara frontier and Chicago, besides which, it takes from the parent and other companies in the system a large volume of tonnage destined for use in its own industrial territory. The Michigan Central prior to 1907 paid regular dividends of 4 per cent, from 1907 to 1913 it paid 6 per cent, in 1914 the rate was reduced again to 4 per cent and continued at that level until the 6 per cent was re-established in 1921. In 1922, as above noted, the payments totaled 14 per cent, 4 per cent declared in June and 10 per cent in December, the December 10 per cent being paid in January, accruing, therefore, to the New York Central in 1923. The New York Central will also receive 10 per cent this month.

The Michigan Central is one of the few roads of the country that could be said to have had favorable conditions in 1922. It was affected, of course, by the railway shopmen's strike but settled with the strikers under the Willard-Warfield agreement on September 19, with a result that it did not meet the severe costs of fighting the strike such as were met by many of its neighbors and connections which did not arrive at a settlement. The coal strike cut its coal tonnage and increased its fuel costs. The demands of the automobile industry were such, however, that the volume of bituminous, 6,054,071 tons, was considerably in excess of the 4,710,600 tons handled in 1921, although still only about three-quarters of the tonnage handled in 1920, 8,174,625 tons. Anthracite, which the Michigan Central receives in considerable volume from the hard coal carriers at the Niagara frontier, totaled in 1922 only 664,649 tons, a reduction of more than 50 per cent from the 1921 total of 1,409,000 tons. The Michigan Central total tonnage in 1922 was 25,261,826 tons as compared with 20,471,263 tons in 1921. It did not handle by any means a volume of traffic such as it moved in such prosperous years as 1918 or 1920, the revenue tonnage for which years was 29,653,126 and 30,203,776, respectively.

The Michigan Central's net railway operating income in 1922 is given above as \$18,066,109. In 1921, the net operating income was \$15,403,271. In 1922, net after fixed charges was \$12,818,271, compared with \$7,725,337 in 1921, an increase of \$5,092,934. Gross income in 1922 was \$10,514,555 over 1921. With this increase in gross was an increase of \$7,024,413 in expenses, and net operating revenues were increased \$3,490,142. In 1922 the total operating revenues were \$83,426,407 as against \$72,911,852 in 1921. The increase in total revenues would, of course, have been greater had it not been for the 10 per cent reduction in freight rates effective on July 1. The management estimates that the effect of the reduction on the basis of the freight traffic handled in the last half of 1922 was to reduce revenue by approximately \$2,339,000.

The total operating expenses in 1922, \$59,576,357 compared with \$52,551,945 in 1921, and maintenance of way expenses (equal to 10.80 per cent of the total operating revenues) exceeded the 1921 total by \$1,501,584. Maintenance of equipment expenses (21.63 per cent of the operating revenues in 1922 and but 16.04 per cent in 1921) compared with \$11,696,773 in 1921, an increase of \$6,346,455. The larger part of the increase in the maintenance of way expenses and a large share of the increase in maintenance of equipment were due to the fact that in 1921 there was a credit to the maintenance accounts of an equalization reserve established in 1920 which it was necessary to eliminate in

1921. Excluding this equalization credit from consideration, the actual increase in maintenance of equipment expenses was \$3,657,975. This very sizable increase is ascribed to extraordinary freight car repairs by which bad order cars were reduced approximately 50 per cent during the year, to extensive work on passenger equipment necessitated by the postponement of repairs in previous years for various causes, to increased locomotive repairs due to work deferred in 1921 on account of the depression when shops were closed for a protracted period and to increased costs incident to the shopmen's strike.

At one time in 1922 the Michigan Central had over 20 per cent of its cars in bad order. At the end of the year it had reduced this percentage to 8.8 per cent. On July 1, 1923, the figure was 9.4 per cent, still slightly higher than it should be but very much better than a year ago. On July 1, also, unserviceable locomotives were 14.6 per cent, less, in other words, than the 15 per cent which the A. R. A. transportation program has set to be reached by October 1. The Michigan Central is at the present time handling a heavy traffic notwithstanding which it had on July 1, 59 serviceable locomotives stored, which is interesting commentary on the manner in which the Michigan Central is well provided with motive power.

Probably the most interesting feature in connection with the comparison of expenses as between 1922 and 1921 is the fact that in spite of the increased traffic handled in the later year there was a reduction of \$624,477 in transportation expenses. This increase was in spite of larger sums spent for fuel. It is of especial interest that there was a reduction in the costs chargeable to freight loss and damage of \$1,243,912, approximately 60 per cent. The economy of the Michigan Central's operations is indicated by the fact that transportation expenses were only 34.65 per cent of the total revenues. The transportation ratio in 1921 was 40.51 per cent.

The Michigan Central is at the present time realizing on a heavy traffic volume. Its net ton miles for the first five months of the present year were very much in excess of those in the early part of any previous year, and in excess, also, of the peak months of 1920. The figure reported in March was the best since the beginning of 1920 with but one exception, August of that year. Gross earnings for the first five months were one-third in excess of those for the first five months of 1922, there having been an increase over last year's figure of approximately \$10,000,000. Expenses were approximately \$4,500,000 greater and as was noted previously net after rents showed an increase of approximately \$4,000,000. The Michigan Central prosperity for the rest of the coming year will depend, primarily, on the prosperity of the automobile industry. If the automobile industry continues good, the Michigan Central should be able to break several tonnage and earnings records.

**REALISM ON THE ERIE.**—According to Ohio papers a story-and-a-half frame dwelling was demolished one afternoon recently by being crushed between two locomotives on the North Main street crossing of the Erie Railroad, at Niles, as the result of a controversy between Frank Kramer, house moving contractor, and the railroad detectives. Kramer was moving the house, an old structure, to DeForest for the purchaser, a woman. He moved the building across the Baltimore & Ohio tracks, but when he reached the Erie, detectives of that line refused him permission to cross. To effectually block him, a switch engine was stopped on the crossing. Kramer still found room to pass, however, and backing a truck down to the building, he hooked on and started to move it. The Erie work train was standing on the west-bound track, and as the house moved forward, both engines advanced upon it, crushing the building between them. The building tumbled like a house of cards and was tossed into the ditch at the side of the line by the wrecking crew.



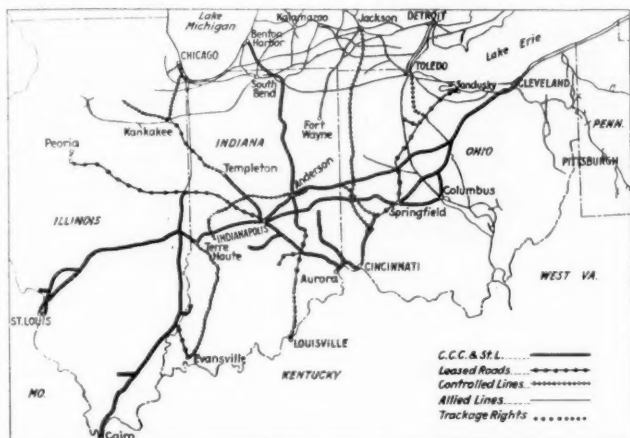
# Big Four 1922 Net Best With Single Exception

Fails by Narrow Margin Only to Rival Peak Earnings  
Made in 1916—Non-Union Coal Big Factor

THE BIG FOUR's net income in 1922 was the best in the company's history with one exception. That exception was 1916 and the 1922 net fell behind that for 1916 by only a slight margin. Net after fixed charges in 1922 was \$7,528,837. In 1916, it was \$8,331,702, or if

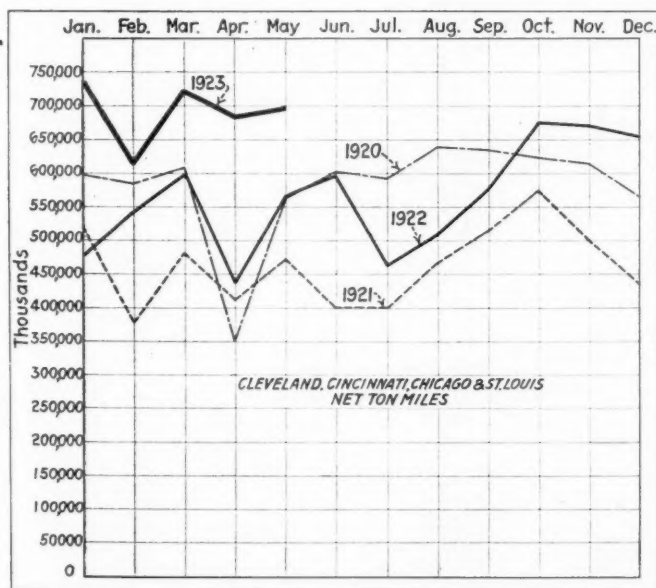
preceding year to the extent that it did, and lack only a small amount of matching the best net it ever had, it means either that the Big Four was favored in 1922 with exceptionally advantageous conditions or else that the property has finally arrived at a condition of prosperity comparable with that attained by its parent New York Central or its relative, the Michigan Central. As a matter of fact the Big Four was favored with exceptionally good conditions in 1922 and there is little doubt at the same time that the property does now partake of the unusual characteristics which have permitted the New York Central Lines to produce the markedly excellent results which they have been consistently showing for a period of several recent years.

When all is said and done, the Big Four was benefited rather than hurt by the coal strike which was one of the three outstanding factors in 1922 railway operation. The Big Four



The Big Four

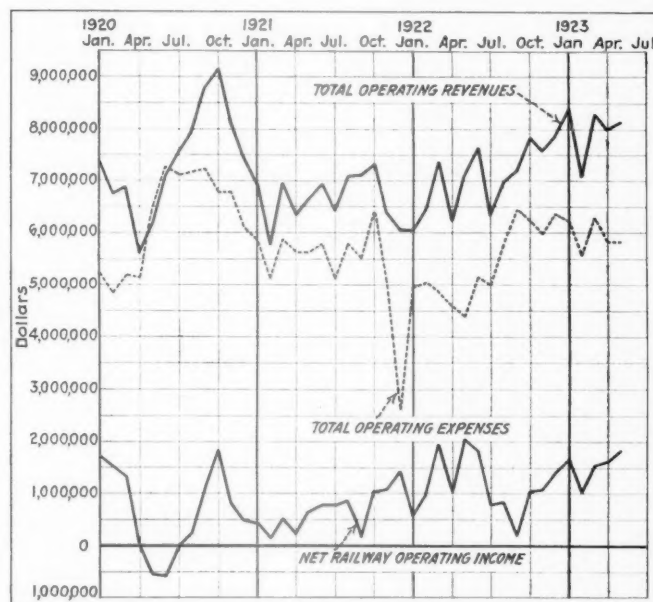
one takes into consideration a charge of \$750,000 to equipment depreciation account, it was \$7,581,702. The 1922 net was sufficient to cover the 5 per cent preferred dividends and the new common dividends—the latter also totaling in 1922, 5 per cent—and still leave a surplus for the year of



The Big Four Is Handling a Record Breaking Traffic

\$4,582,403. In 1921 net after charges was \$2,929,949 and the surplus after preferred dividends—no payments were made on the common from 1910 to 1921 and only irregularly prior to that time—was \$2,326,617.

If under such conditions as existed on the railways of this country in 1922, the Big Four could increase its net over the



The Low Operating Expenses in December, 1921, Result from a Credit to the Maintenance Accounts, Caused by the Elimination of Maintenance Equalization Reserves Established in 1920.

Big Four Gross and Net

serves some 75 coal mines. About 50 of these are in Illinois and about 25 in Indiana. The latter 25 include the mines on the Evansville, Indianapolis & Terre Haute, acquired recently by the Big Four, a separately operated property, recently rehabilitated by the Big Four management, and serving the largest undeveloped coal deposits in Indiana. The Big Four mines were of course idle during the coal strike. For an extended period the Big Four coal loadings were nil. In addition to the coal which originates on its own lines, however, the Big Four receives a tremendous volume of Kentucky non-union coal from the Louisville & Nashville. This tonnage comes to the Big Four at Cincinnati, destined to the west and northwest through Chicago, to the Big Four industrial territory and to such centers as Detroit, Toledo, Cleveland, etc., and there is also a large volume received at Louisville bound mostly for Chicago. The statement of these details is almost enough to explain how the Big Four should have been benefited by the coal strike, although its

own mines were idle, because the Louisville & Nashville territory was one of the few areas supplying coal to the central part of the United States and the demands for this coal, particularly in the automobile industry, increased the tonnage output in a marked manner at least up to the beginning of the shop strike on July 1. The Big Four, as a New York Central property, settled the shop strike under the Willard-Warfield agreement which meant that its operations were not handicapped in the fall when industrial expansion increased the demand for railway transportation. As a final result the Big Four coal tonnage in 1922 amounted to 19,126,275 tons, an increase of 3,170,770 tons over 1921 and comparing with 19,668,398 tons in 1920 in which year the Big Four handled the largest volume of coal tonnage which it has ever handled.

Some insight into the manner in which the Big Four has continued its 1922 conditions and as a result some insight into the manner also in which Big Four operations have been improving in recent years is contained in a comparison of the Big Four's present business with that in 1920. The tonnage carried in 1920 was the largest in the Big Four's history. The best month in 1920 from the standpoint of net ton miles was August. In August the net ton miles totaled 640,091,000. This figure was exceeded in October, 1922, and has been exceeded by a wide margin in every month since that time with the single exception of February, a short month of adverse operating conditions. The best month in the period from October, 1922, to May, 1923, was January, and in January the net ton miles totaled 736,724,000.

The Big Four may be expected to rival in 1923 its 1922 operating results and to exceed the previous 1916 record of net income. In the first five months of 1923 its gross income exceeded the total for the first five months of 1922 by roughly \$6,500,000. Net operating income to the end of May this year was \$7,628,993 as compared with \$6,582,338 in the first five months of 1922.

The Big Four operates a total of 2,409 miles of line. These lines radiate from Indianapolis, and to a lesser extent Cincinnati, reaching Cleveland, Toledo, Chicago, Benton Harbor, Peoria, St. Louis, Cairo, Louisville and Evansville, entrance into Toledo, Chicago, and Louisville being by trackage rights. This means that the property is permitted intensive development of an extremely prosperous farming and industrial area, but on the other hand it also means that because of the large number of branch lines traffic density does not show in the figures to be as large as might be the case if it partook more of the character of a single route. Big Four tonnage is diversified. Coal is the most important single commodity handled and has shown a tendency to increase proportionately to the total tonnage over a period of years. Normally it constitutes about 50 per cent of the total revenue tonnage. In 1922, because of the special conditions ruling it made something more than 50 per cent. A large traffic in lumber is received through Cairo and Louisville. An important feature of the Big Four operations is the attention given to time freight and the movement of perishables. It is an interesting feature of the Big Four's operations that it has an extremely large volume of interchange traffic.

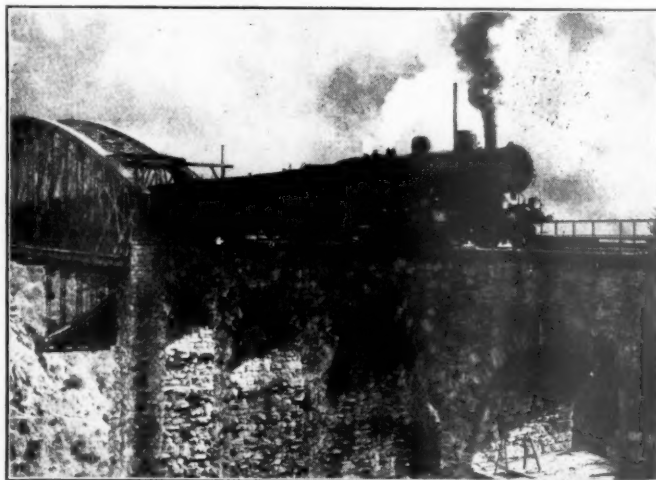
The Big Four has in recent years been devoting large sums of money to the improvement of its properties, particularly with reference to double tracking. At the end of 1922 the company operated 684 miles of second track. This was an increase of 30 miles over the amount of second track at the end of 1921 and compared with 545 miles at the end of 1916. The Evansville, Indianapolis & Terre Haute, a separate property, has been given special attention. The Big Four acquired this property, formerly a part of the Chicago & Eastern Illinois, in 1920. Up to the end of 1922, it had spent \$825,000 for its reconstruction.

Big Four total revenues in 1922 were \$84,665,690 as compared with \$79,793,593 in 1921, an increase of \$4,872,097. Operating expenses totaled \$64,858,314, comparing

with \$64,406,122, an increase of \$452,191. The 1922 operating ratio was 76.61; that for 1921, 80.72. The large volume of coal tonnage was reflected in a reduction in the receipts per ton mile from 1.058 cents in 1921 to 0.935 cents, the decrease being greater than would have followed from rate reductions alone. The management, incidentally, estimates that the 10 per cent rate cut on July 1 reduced Big Four revenues for the year by approximately \$2,500,000. Reductions in expenses were shown in the maintenance of way and transportation accounts. The reduction in the former totaled \$1,710,981, ascribed to lower cost of materials and wages and "a decrease in the application of rails, ties and ballast." A reduction of \$331,185 in transportation expenses was in spite of increased fuel costs. The transportation ratio for the year was 38.59. Maintenance of equipment expenses increased over 1921 although the 1921 accounts included heavy charges for freight car repairs. The 1922 increase is ascribed to costs incident to the shop strike.

Revenue tons in 1922 totaled 35,828,091 comparing with 30,043,632 in 1921, the large part of the increase as heretofore indicated being in the expanded coal tonnage. Revenue tons in 1920 were 38,513,685, so it will be seen that the Big Four in 1922 was far from handling a record tonnage. Revenue ton miles in 1922 were 6,589,758,000; in 1921, 5,318,082,000; but in 1920, 6,874,262,000. The Big Four has only a short way to go to reach the standards of equipment condition set by the A. R. A. for October 1. On July 1, 1923, bad order cars were 5.5 per cent of the total on line. Unserviceable locomotives were 14.2 per cent and heavy traffic notwithstanding, there were 57 serviceable locomotives stored. The amount of improvement made in the equipment situation is indicated by the fact that on August 1, 1922, for example, bad order cars were 19.4 per cent and on September 1, 1922, just prior to the settlement of the shop strike, unserviceable locomotives were 37.7 per cent.

The New York Central has for some time been carrying out its plan to merge the Big Four with the parent company. In December, 1921, it offered to exchange its own stock for Big Four stock in the ratio of par for par for the preferred and four shares of New York Central to five shares of Big Four common. In 1922, the New York Central acquired 82,353 shares of the Big Four preferred and 126,867 shares of the common under this plan. At the end of the year the parent company held 82.36 per cent of the Big Four's preferred, 91.21 per cent of the common and a total of 89.66 per cent of the Big Four's capitalization.



An Express Passenger Train on the Arlberg Line, Austrian State Railways



# Railway Union Spends Money With Abandon

## Suit for Recovery of Maintenance of Way Funds Discloses Gross Irregularities in Expenditures

**"B**ABIES HAVE DIED, women and children have gone hungry and in rags and men have been underfed and undernourished on account of the present inadequate wages." With these words, F. H. Fljzodal, grand president of the Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, closed his appeal for an increase in the wages of maintenance of way employees before the Railroad Labor Board last month, as quoted from Labor, the spokesman for organized labor.

The character of this appeal in behalf of these employees stands out in marked contrast with the way in which former officers of this organization spent the money of these men, according to information revealed recently in court proceedings in which Allen E. Barker, former president of the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, was ordered by the court to return to the brotherhood \$177,000 which he was held to have appropriated to his own use and to render an accounting for an additional \$40,000. This decision was rendered by Judge Henry A. Mondell of the Circuit Court for the Third Judicial Circuit of Michigan last November in an action for an accounting brought against Barker by officers of the brotherhood, who claimed that he had embezzled and converted to his own use some \$217,000 of the funds of the association, or the major part thereof. During the course of this trial, which was held in October of last year, much information was brought to light regarding the activities of this and other labor organizations during the period of Federal control. The following information regarding these activities, which has only recently become available, is taken in large part from the official transcript of the testimony presented at this trial. A feature of particular interest is the fact that this action was pressed by E. F. Grable, who has recently been appointed a member of the Railroad Labor Board, and who succeeded Barker as president of the maintenance of way organization, following his resignation under charges in 1920.

In his decision Judge Mondell stated that "it appeared without contradiction that large sums of money, the property of plaintiff, came into the hands of Barker between March 6, 1919, and February 13, 1920. The method of securing the funds was the giving of orders, either verbally or in writing, to the grand secretary and treasurer of the association, whereupon the money was turned over to him. The excuse for this slipshod method of disposing of the funds of the organization was that large sums of money had been voted into what was known as the 'general organizing fund' although the moneys in this fund were not used for the purpose of organizing, but were used for purposes, supposed by the members to be for the general good of the order and for its benefit, in some cases by means and methods scarcely countenanced in law.

"It appears from the uncontradicted evidence that at one time a check for \$25,000 was given to defendant, and various checks ranging from a few hundred dollars to many thousands of dollars were, upon his order, drawn in his favor, in the form of bank checks. Most of these checks were immediately deposited in his personal bank account in the Peoples State Bank in the City of Detroit, and funds were drawn from said bank account by defendant Barker at his own sweet will. The coincidence between the receipt of large sums of money and the drawing of checks for large sums of money in favor of grantors who were deeding lands

to defendant personally, and to carpenters and other contractors who were building houses upon such lands for the defendant, led to the institution of these proceedings.

"The defendant did not appear at the protracted hearing of this case, and there was, therefore, no question raised as to the truth of the various statements of the witnesses for plaintiff. The fact that defendant Barker received during the period in question large sums of money belonging to the association, and that he, during that period and subsequently, diverted large sums of money, wholly or in part, to his own personal use and benefit, was not seriously questioned."

Defense was based mainly on the ground that the organization was estopped from prosecuting the suit by reason of a compromise settlement which it was claimed was entered into with Barker at the time that his resignation as president of the brotherhood was accepted in 1920. Judge Mondell overruled this claim on the ground that the defense of estoppel cannot be asserted to uphold crime or to be used as an instrument of fraud, and handed down the judgment against Barker referred to above.

### Control Vested in Small Committee

The United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers is an unincorporated organization. It has been claimed that its membership has run as high as 400,000, although the accountant who audited the books of the brotherhood testified that, based on the amount of dues, the membership was in the neighborhood of 200,000 in 1919, and more recent statistics submitted to and made public by the Interstate Commerce Commission show a membership of only 163,000 in 1922. Based on annual dues of \$8 per member, the yearly income of the organization has been variously estimated as between \$1,300,000 and \$3,200,000.

The control of the organization and the disposition of these funds are vested in a grand lodge or convention of delegates which meets triennially. Between these conferences its affairs are administered by an executive committee of five members. Prior to the meeting of the grand lodge in Detroit, Mich., in October, 1922, the officers consisted of a president, 14 vice-presidents, a secretary-treasurer and five members of an executive board. In addition, there were approximately 190 general chairmen, one for each of the larger railways of the United States and Canada. The salary of the president was fixed at \$14,000 in addition to an unlimited expense account, while each of the vice-presidents received \$6,000 and the secretary-treasurer \$5,000. Of the general chairmen, 150 are said to have received \$300 to \$400 per month and the remaining 40 were paid on a per diem basis. The salaries of these officers alone are said to have aggregated over \$800,000 annually, in addition to which there were traveling and other expenses and the salaries of subordinate employees. The extravagance of this central organization evidently became so pronounced that at the triennial convention last October the number of vice-presidents was reduced from 14 to 5 and their salaries were cut to \$4,200.

The impetus which was given to the enrollment of railway employees in labor organizations by the Railroad Administration during the period of Federal control gave rise to a rapid growth in the maintenance of way brotherhood. The inefficiency of those responsible for the conduct of its affairs

is demonstrated by the looseness in the accounting system which was permitted to develop and which offered an opportunity for irregularities. This danger was pointed out by a private auditor as early as August 22, 1919, in a letter to A. E. Barker, then president of the organization, in which he stated that "The condition of affairs is such that a great temptation exists for any one so inclined to misappropriate the organization's funds with little likelihood of being detected under the loose manner in which the accounting is being handled." Further attention was directed to this condition by the auditor in a letter dated September 8 in which he stated that "During the progress of this work we find a multiplicity of errors of every conceivable kind and nature, some of the most flagrant being the posting of the lodge numbers in the money column and the entering of items in the lodge accounts to which they did not apply. The conditions of these records reveal the gross incompetency of the employees handling this work."

Under such conditions it is not surprising that irregularities developed although from the testimony presented at the trial, it appears that the first public charge that all was not right in the handling of the funds of the organization did not develop until four employees of the brotherhood had been dismissed summarily by President Barker in February, 1920. These employees, who were also members of the brotherhood, engaged an attorney, who wrote the secretary of the executive board on February 26 that the positions of these men in the organization had been such that transactions indicating gross irregularities had come to their attention which they desired to lay before the board. On the following day, these men appeared before the board in person to press their charges, and on March 17 they repeated their charges in a letter which read in part as follows:

"It has come to our knowledge that checks ranging from \$5,000 to \$50,000 have been drawn and issued payable to Allen E. Barker, such checks being charged to the account known as 'special organizing.' From March 31, 1919, to February 13, 1920, this fund has been drawn upon to the extent of \$217,000. We question the purpose for which these sums in reality were drawn, and furthermore we charge that Allen E. Barker, as grand president of this brotherhood, had no authority under its constitution, nor did he receive authority from the executive board now or heretofore."

On March 16 the secretary of the executive board also addressed a letter to the board charging Barker with obtaining money under false pretenses and demanding his suspension and an investigation of the charges. These charges were laid before Barker and were discussed by the executive board on March 17 and 18. On the latter day, Barker offered to resign on the condition that all charges against him would be dropped, and his offer was accepted by the board, the minutes of the meeting stating that "This board exonerates him (Barker) from any and all charges placed before this board."

The indifference of most of the members of the executive board regarding charges as serious as these is indicated by the fact that in all of these proceedings their attitude appeared to be that of desiring to hush the entire matter up rather than to ascertain the facts and attempt to recover those funds which had been misappropriated and to punish the offenders. While the filing of the charges by the discharged employees led to the dismissal of the secretary-treasurer and the resignation of the president and later to the deposing of two members of the executive board, the board took no action to recover the funds which it was claimed were stolen. On the contrary, when E. F. Grable, who succeeded Barker as president on his resignation, and the attorney for the brotherhood undertook to press the charges against Barker and an attorney who he had retained to handle brotherhood matters during his administration and

demand an accounting from them, their action did not meet with the approval of the executive committee as is indicated by a motion introduced at its meeting on May 10, 1920, that "Brother Grable and Attorney Bratton be ordered to dismiss any suits which have been filed against Miller and Barker and that W. S. Bratton and Grand President Grable be ordered to start no more suits at all until authorized by a vote of the full executive board." This motion was passed by a vote of three to two, the three members voting for it being those who had voted previously to exonerate Barker, while the two who opposed the motion were newly elected members of the committee. President Grable and the secretary-treasurer of the organization then began action against Barker alone without appearing to have definite authority for their action from the executive committee.

The incompetency or indifference of the executive committee is further shown by the fact that it does not appear to have made any serious effort to secure an accounting from Barker before accepting his resignation. With the exception of a statement that \$50,000 went to "Paddy" Draper, secretary-treasurer of the Dominion Trade and Labor Congress, presumably to fight the propaganda for the one big union, it was testified that no information was ever secured from Barker about the actual disposition of the money. At one time he told four members of the board that this money *could* have been spent for the miners' strike, the steel workers' strike, lobbying against the Esch-Cummins bill and the Mexican (immigration) question and in various other ways, but the admission was made by a member of the executive committee at the trial that no member of the executive committee had ever tried to secure a direct statement from him that the money *had* been spent for these purposes, nor did they demand an accounting from him. Barker passed the matter off with the statement that he had secured no receipts for these expenditures, for, like tips, it was not practical to secure them. The incompetence of the members of the executive committee is indicated by the following abstract from the testimony of a member of the executive committee:

"Question.—You wish the court to understand that you sat there and let him (Barker) tell you what it could have been used for and never asked him about what it was used for?" "Answer.—Yes."

That Barker realized the danger of his position even after receiving "exoneration" from the executive board at the time of his resignation is indicated by the fact that as late as December, 1920, he offered to pay \$27,500 in settlement of all claims. At no time did Barker appear in court to refute the charges although he was in the city in attendance at part of the sessions of the triennial convention of the grand lodge during the time of the trial. Repeated efforts were made to secure service on him without success.

#### Railway Brotherhoods Back Steel Strike

The evidence presented at the hearing traced the diversion of brotherhood funds to Barker in minute detail. The labor union's cashier identified numerous checks for amounts ranging from a few dollars to many thousands which he had drawn on brotherhood funds in favor of Barker; the secretary-treasurer confirmed his signature on the checks and his authorization of their preparation, while the receiving teller at Barker's bank presented deposit slips showing that they had been placed to Barker's personal account.

These checks were requested by Barker for a variety of purposes. The fact that their purpose was not challenged by other officers sheds much light on their attitude toward the various purposes suggested. Thus, on March 6, 1919, Barker addressed a memorandum to the secretary-treasurer reading as follows:

"Please issue check payable to me for \$7,000 to be our contribution to a fund being created by 14 organizations to boost for government ownership of railways. This has been



authorized by the grand executive committee up to \$25,000. This is to be booked as a special organizing expense."

Again on October 25, Barker wrote the secretary-treasurer from Washington, D. C., in part as follows:

"Everything is OK here so far as the national agreement goes, but there is hell to pay about the cursed Cummins bill and the 14 are mobilizing to give the employers group a run for their money. The 14 railroad brotherhoods have decided to get behind the steel workers and if possible beat the operators in their well-organized attempt to crush the union. The 14 have pledged a billion dollars (this is strictly confidential) to the steel workers. Our share for the first shot—as Dorey would say, is \$25,000, which amount I have today drawn my personal check for. I, of course, have not got anything approaching that amount in the bank. So, you will please deposit *immediately* \$25,000 to my personal account, so that the check will be honored. This is authorized by the grand executive committee."

The fact that the executive committee approved the use of the funds of the organization to support the Plumb Plan League is also shown by a request by Barker on September 10, 1919, for a check for \$10,000 in favor of the treasurer of the Plumb Plan League, this check to be charged to the "special organizing" account. Again on January 29, 1920, a check for \$10,000 was issued on a memorandum reading "14 organizations launching a political campaign to defeat our enemies and elect friends to the next legislature."

That the political activities of the organization were not confined to the United States, but extended across the northern border into Canada, is shown by the issuance of a check for \$50,000 to be used by P. M. Draper, secretary-treasurer of the Dominion Trades and Labor Congress at Ottawa, to combat the propaganda for one big union in Canada and to prevent members of the maintenance of way organization from transferring their allegiance to the competitor.

It was testified that with the exception of the \$50,000 sent to Draper, these checks, drawn on brotherhood funds at Barker's request, were made payable to Barker personally with the exception of a few, including one for \$16,000 which was drawn in favor of his secretary, Mrs. M. S. Edwards, and endorsed by her "credit to account of A. E. Barker." These checks were deposited to his personal credit in the Peoples State Bank of Detroit. They were charged to a "special organizing account" which the executive committee had authorized to the amount of \$25,000. Knowing that the authorization had been exceeded, the secretary-treasurer called the attention of the chairman of the executive committee to the fact and was advised by him verbally that this excess was authorized, although he admitted that he had never received or seen any written authority from the executive board for payments beyond the \$25,000. Later members of the executive committee testified that they did not know of the existence of this "special organizing account" although other members admitted that they had approved telegraphic requests from Barker and other members of the board for special appropriations which never came before the entire committee for authorization. No secret was made of the fact that the funds so authorized were to be placed to Barker's personal account for this was apparently understood among the members of the executive board.

The rapidity with which these funds were withdrawn by Barker is indicated by the fact that the amount charged to this "special organizing account" was shown by an audit of the books to aggregate \$117,000 between March 31 and June 30, 1919. In a later report for the six months ending December 31, 1919, an additional \$75,000 was found to have been charged to this account. In referring to this charge the auditor stated in his report that "In view of the absence of any data whatsoever in support for this expenditure, we conferred with your grand president who advised

that it was for special expenses of the Brotherhood." Still another report from the auditor for the eight months' period ending February 29, 1920, showed that the amount charged to this account had been increased \$25,000, reaching a total of \$217,000.

That the funds so deposited to Barker's personal account were diverted largely to his personal use was established by detailed testimony tracing checks to real estate companies and contractors in payment for property acquired in Detroit and to contractors for houses erected thereon. Thus, the cashier of a real estate company identified payments made by Barker on 12 different parcels of property aggregating more than \$22,500 between March 6, 1919, and January 7, 1920. A contractor also testified that he built as many as ten houses on these various parcels of property, receiving for his work on these houses amounts ranging from \$8,000 to \$12,000 and aggregating nearly \$100,000 and having as many as five or six under construction at one time. That all of the money did not go for real estate was shown by the tracing of the purchase of a Haynes sedan automobile, for which Barker paid \$1,000 as a first payment on November 6, 1919, and \$3,017.94 on December 8. On December 20, the Detroit Haynes Company received another check from Barker for \$4,087 and on January 9, 1920, one for \$4,013, presumably for other cars.

The looseness in the handling of the association's funds was not confined to the money drawn by Barker, for testimony was introduced to the effect that an attorney engaged by the organization at a salary of \$25,000 per year and office expenses, paid in advance, was entrusted by Barker with upwards of half a million dollars of the organization's funds for investment and that no accounting was made to the brotherhood of the use of this money, nor were any records of it kept in the brotherhood's name at the association's headquarters, although it was asserted that he had loaned \$15,000 of it to himself and other amounts to relatives. It was this attorney who was mentioned with Barker in the resolution of the executive committee quoted above instructing Grable to dismiss the suit which he had started in behalf of the organization. The action against this lawyer was later settled out of court although it was stated that the brotherhood lost money on the investments.

Later the executive committee engaged another attorney, paying him a retainer of \$2,500 and a salary of \$100 per day to investigate the alleged irregularities in Barker's handling of funds with a further stipulation that he would receive additional compensation if he was able to recover any of the money.

That the brotherhood itself was not immune to reckless expenditures is evidenced by the creation of an industrial department by resolution adopted at the meeting of the grand lodge in September, 1919, authorizing the investment of several hundred thousand dollars in various plants for the manufacture of gloves, underwear, etc., at Ypsilanti, Mich., Toledo, Ohio, and Williamston, which investment was largely lost. Not satisfied with this experiment in high finance, the executive board voted on February 5, 1920, only six weeks prior to his resignation, to authorize Barker to borrow not to exceed \$500,000 "for the purpose of equipping factories or other requirements." Nothing came of this action, however, for it was rescinded on March 12.

In spite of completeness of the evidence regarding the misappropriation of funds and the mismanagement of the affairs of the organization during Barker's administration, he is said to have participated actively as a delegate in the deliberations of the grand lodge which was in session during the time the trial was in progress. Furthermore, Grable, the secretary-treasurer of the organization and every member of the executive committee associated with them in the prosecution of the case against Barker, were defeated for re-election at this meeting.

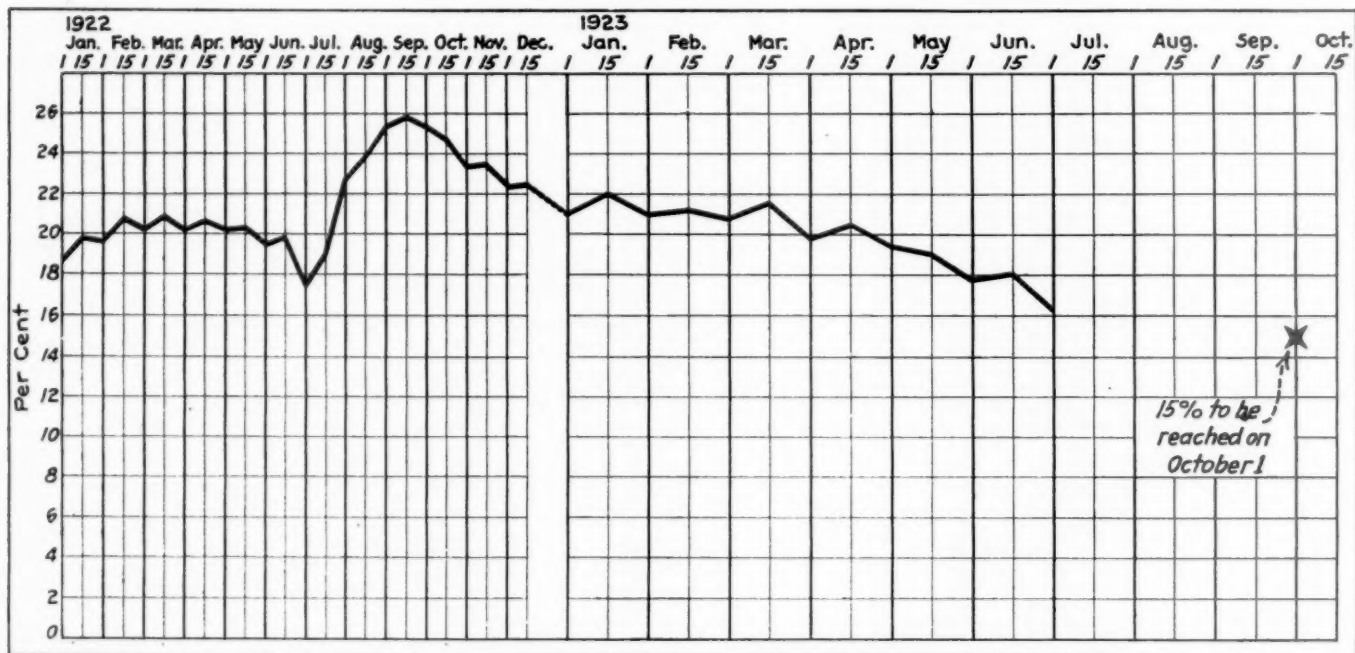
## Railroads Approach 15 Per Cent Unserviceable Locomotive Goal

THE RAILROADS made rapid progress in June towards reaching the goal of 15 per cent locomotives held for repairs requiring over 24 hours which the A. R. A. transportation program has set for October 1. The progress made was sufficient so that on July 1, the percentage of locomotives held for heavy repairs had been brought down to 16.2 per cent, the smallest number ever reported by the Car Service Division since it began its compilation of locomotive condition reports in August, 1920.

Several sections of the country have already reached or bettered the 15 per cent mark. As of July 1, the average for the Allegheny district was only 14.5 per cent, the Pocahontas district reported only 14.1 per cent, and the Southern district had brought its average down to 13.6 per cent. The poorest report was made by the Southwestern district with 20.2 per cent, and the Western railroads as a whole reported 17 per

### Locomotive Condition on July 1

Road	No. on Line	No. Serviceable	No. Stored Serviceable	No. Held for Repairs Requiring Over 24 Hrs.	% Held for Repairs Requiring Over 24 Hrs.
Central of Georgia.....	306	279	0	25	8.2
Virginian .....	146	124	0	12	8.2
Maine Central .....	229	204	0	19	8.3
Elgin, Joliet & Eastern..	270	232	2	26	9.6
Nash., Chattanooga & St. Louis .....	269	238	3	28	10.4
Kansas City Southern...	182	162	6	20	11.0
Florida East Coast.....	131	116	34	15	11.5
Chicago Great Western..	267	236	15	31	11.6
Pittsburgh & Lake Erie..	313	237	10	37	11.8
Duluth, Missabe & Nor.	109	96	1	13	11.9
Illinois Central .....	1,789	1,566	0	214	12.0
*Pere Marquette .....	455	384	4	55	12.1
El Paso & Southwestern	151	132	11	19	12.6
Louisville & Nashville..	1,294	1,009	0	167	12.9
Buffalo, Rochester & Pittsburgh .....	294	242	4	38	12.9
Philadelphia & Reading..	1,107	942	64	146	13.2
Pennsylvania System...	7,284	6,224	65	968	13.3
Erie .....	1,560	1,322	187	211	13.5
Boston & Albany.....	363	280	0	49	13.5
Baltimore & Ohio.....	2,477	2,137	24	340	13.7
Fort Worth & Denver City .....	115	99	17	16	13.9



Locomotives Unserviceable Approaching 15 Per Cent Goal

cent. The average shown for the Eastern district was 17.7 per cent.

In last week's issue of the *Railway Age* there was given a tabulation of the bad order car situation by roads, the roads being arranged in the order of their excellence as viewed from the smallness of their bad order car percentage. A similar tabulation is given below for locomotives. The roads included are, roughly, those owning 100 or more locomotives. For each road there is given the figure of total locomotives on line, the number serviceable, the number stored serviceable, the number held for repairs requiring over 24 hours and the percentage that the number of locomotives held for such repairs bears to the total on line. The list is headed by the Central of Georgia and the Virginian with but 8.2 per cent, followed closely by the Maine Central with 8.3 per cent, the Elgin, Joliet & Eastern with 9.6 per cent, etc. The first large road in the list is the Illinois Central, the Illinois Central reporting 12 per cent. The Pere Marquette reports 12.1 per cent, the Louisville & Nashville 12.9 per cent and the Reading, Pennsylvania, Erie and Baltimore & Ohio report figures between 13 and 14 per cent. The detailed tabulation by roads follows:

### A Large Number Below the Desired 15 Per Cent

Delaware & Hudson....	472	379	12	66	14.0
Southern Ry. ....	2,155	1,838	1	304	14.1
Southern Pacific Lines..	2,079	1,744	41	293	14.1
Chicago, St. Paul, Minn. & Omaha .....	391	336	15	55	14.1
Cleve., Cincin., Chic., & St. Louis .....	859	733	57	122	14.2
Chic., Ind. & Louisville..	155	133	2	22	14.2
Chicago & North West..	2,092	1,791	43	301	14.4
Atchison, Topeka & Santa Fe .....	2,066	1,737	111	297	14.4
Chicago, Rock Island & Pacific .....	1,600	1,355	4	230	14.4
Norfolk & Western.....	1,059	906	0	153	14.4
Delaware, Lackawanna & Western .....	759	590	0	110	14.5
Michigan Central .....	794	635	59	116	14.6
Chesapeake & Ohio.....	935	796	11	137	14.7
*Chic., Mil. & St. Paul..	1,990	1,690	67	295	14.8

### Above 15 Per Cent

Western Pacific .....	139	118	3	21	15.1
Mobile & Ohio.....	231	194	0	35	15.2
Duluth & Iron Range...	92	78	0	14	15.2
Long Island .....	169	143	0	26	15.4
Union Pacific .....	1,894	1,593	273	298	15.7
Seaboard Air Line.....	547	459	10	88	16.1
Chic., T. H. & So. Ea..	112	94	0	18	16.1
Chicago & Alton.....	340	285	39	55	16.2
Atlantic Coast Line....	872	718	32	142	16.3

\*Previous report.



Road	No. on Line	No. Serviceable	No. Stored Serviceable	No. Held for Repairs Requiring Over 24 Hrs.	% Held for Repairs Requiring Over 24 Hrs.
Minn., St. Paul & S. S.					
Marie	530	415	7	88	16.6
Chicago, Burlington & Quincy	1,937	1,601	49	336	17.3
Northern Pacific	1,391	1,146	52	242	17.4
St. Louis-San Francisco	974	804	41	170	17.5
Grand Trunk Western	324	264	2	59	18.2
Gulf Coast Lines	99	81	5	18	18.2
Norfolk Southern	108	88	0	20	18.5
New York Central	3,593	2,795	335	668	18.6
Minneapolis & St. Louis	222	180	3	42	18.9
Bessemer & Lake Erie	190	135	1	36	18.9

## 20 Per Cent or Above

Union	160	121	0	32	20.0
International-Gt. North.	175	139	33	36	20.6
Boston & Maine	1,132	872	0	234	20.7
Colorado & Southern	158	125	12	33	20.9
St. Louis Southwestern	280	214	15	59	21.1
Great Northern	1,399	1,085	108	301	21.5
New York, New Haven & Hartford	1,140	843	1	246	21.6
Chicago & Eastern Ill.	345	270	20	75	21.7
Missouri Pacific	1,152	862	0	252	21.9
Wabash	607	458	2	134	22.1
Texas & Pacific	361	271	44	83	23.0
New York, Ontario & Western	183	108	0	42	23.0
New York, Chicago & St. Louis	268	198	0	62	23.1
Missouri-Kansas-Texas	702	536	84	164	23.4
Lake Erie & Western	141	107	5	34	24.1
Wheeling & Lake Erie	215	154	0	52	24.2
Lehigh Valley	1,011	754	38	251	24.8
Hocking Valley	164	122	2	42	25.6
Western Maryland	309	204	21	81	26.2
Central of New Jersey	565	406	0	150	26.5
Denver & Rio Grande Western	541	367	11	168	31.1

\*Previous report.

Of the figures available to check a railroad's locomotive condition two are of special value, one being the percentage of locomotives held for repairs requiring over 24 hours and the other the number stored serviceable. The number stored in serviceable condition will, of course, be larger if the railroad's traffic is running in smaller volume. It would also follow that if a railroad were handling a heavy volume of traffic and its number of locomotives stored serviceable represented a considerable number, the road could be said to have a good equipment condition even though its unserviceable per cent might not be as low as might otherwise be desirable. Thus, the New York Central on July 1 had 335 locomotives stored serviceable. It is at present handling an unusually heavy traffic so that the indication would be that the New York Central has a very favorable locomotive condition even though its percentage of locomotives unserviceable on July 1 was 18.6 per cent. The condition of the Erie on this basis is especially favorable because on July 1 it had a percentage unserviceable of only 13.5 per cent, whereas at the same time it had 187 locomotives stored.

The number of serviceable locomotives stored on all roads

of the country on July 1, was 2,181, the largest figure reported since last September. The railroads are making considerable progress in this respect as is indicated by the fact that on January 1 the number stored was only 576; on April 1, it had become 914; on March 1, 1,326; on January 1, 1,569, and on July 1, 2,181. The roads that have stored locomotives in sizable quantity are the Erie, as above noted, with 187, the New York Central with 335, the Great Northern with 108, the Santa Fe with 111, the Union Pacific System with 273 and the Katy with 84, etc. The western districts own slightly over one-third of the total locomotives in the country. The Western roads are not at present handling proportionately as heavy traffic as are the roads in the East and South. This probably explains how it happens that on July 1 the Western roads had over one-half the total number of stored locomotives of all the roads of the country.

A statement by districts is given as follows for July 1:

District	No. on Line	No. Serviceable	No. Stored Serviceable	No. Held for Repairs Requiring Over 24 Hrs.	% Held for Repairs Requiring Over 24 Hrs.
Eastern:					
Group A	3,140	2,418	7	591	18.8
Group B	8,104	6,362	591	1,434	17.7
Group C	4,691	3,757	150	799	17.0
Total Eastern	15,935	12,537	748	2,824	17.7
Allegheny	12,347	10,412	185	1,793	14.5
Pocahontas	2,140	1,826	11	302	14.1
Southern:					
Group A	3,909	3,307	43	577	14.8
Group B	4,580	3,856	38	580	12.7
Total Southern	8,489	7,163	81	1,157	13.6
Northwestern	8,977	7,467	315	1,450	16.2
Central Western	11,695	9,659	595	1,925	16.5
South Western	4,323	3,392	246	875	20.2
Total Western	24,995	20,518	1,156	4,250	17.0
Grand Total	63,906	52,456	2,181	10,326	16.2

## Electric Locomotives for the Baltimore & Ohio

TWO 120-TON, 600-volt locomotives for the Baltimore Tunnel of the Baltimore & Ohio railroad have just been shipped from the Erie factory of the General Electric Company. The locomotives are of the steeple cab type and have articulated trucks equipped with G-E 209 motors. The length of the locomotives' inside knuckles is 39 ft. 6 in., length over cab, 33 ft. 6 in., height over cab, 12 ft. 4 in., overall width 10 ft. The dimensions of the operating cab are 10 ft. by 15 ft.

The construction of the locomotive is such that buffing and hauling stresses are carried through the truck side frames



Two 120-Ton Electric Locomotives for the Baltimore Tunnel of the Baltimore & Ohio

and an articulated joint, thus eliminating strains from the cab and platform. Multiple unit control and four third-rail shoes are provided. The locomotives will haul a 1,200-ton train on level tangent track at a speed of 17 miles an hour and will haul the same train up a 0.5 per cent grade at 14 miles an hour.

## The Economical Loading of Trains\*

By W. C. Morse

Vice-President and General Manager, Louisiana Railway & Navigation Company

**T**HE ECONOMICAL LOADING of trains bears the most intimate relation to the net revenues. Every move should be made with the end in view of hauling the maximum economical trainload. The superintendent has a difficult task in enthusing the various groups of employees under his jurisdiction in this problem, and particularly in securing the necessary co-operation of the train and engine men, on account of their method of compensation, the basis of which is the train mile, which is opposed to the maximum ton mile.

It would be desirable, therefore, to arrange, if possible, for a change in the method of compensation to these men from a mileage to an hourly or tonnage basis; or in lieu of the seeming difficulties attending such a change, to suggest the consideration of the application of the principle of the bonus system to their compensation. For instance, after deciding on the rating of the engines on the various districts, pay a bonus of a stipulated amount for the gross ton miles per trip in excess of the stated rating, or a bonus of so much per hundred gross ton miles in the aggregate for the month, in relation, of course, to the power used, the matter to be worked out on a basis that will make for unity of purpose between these men and the company. As the matter now stands, the train and enginemen are paid by the mile and any policy that tends to reduce the miles per hour or day, as the loading of trains does, does not elicit their hearty co-operation.

On single track roads, where freight trains make little or no overtime, it is safe to assume that engines are not hauling the maximum economical load, because delays aggregating three to five hours frequently occur and when that much time is run off, the engine is not properly loaded. An examination of the train sheets on such a division will disclose the fact that many of the trains make their hundred miles in five to seven hours, which further indicates a loss in ton miles.

While it is desirable to get trains over the road in the quickest practicable time, it is equally important to make available the tractive effort at command, and the services of the crew paid for. A crew is paid 10 hours, say, for one hundred miles. If the trip is made in six hours, payment is made for two hours not actually earned which is a dead loss so far as wages are concerned. Care should be taken, therefore, not to hammer trainmasters and chief dispatchers too hard on overtime, or it will likely result in "saving at the spigot and wasting at the bung," through a reduction in tonnage per train.

Train and engine men do not want overtime when they can increase miles per hour. It is the miles they want with the highest speed per hour, since they are paid by the mile. Watch, therefore what I will, for convenience, term the unearned time, just as closely as the overtime, that is, the hours paid for that are not worked, where payment is made

for one hundred miles, eight hours, made in five or six hours and which, therefore, represents a loss. Few roads, so far as I know, keep an account of this unearned time which increases as overtime decreases and vice versa. It is easy to be extravagant with this item since there is no absolute check against it in overtime and tonnage statements, yet it bears a very close relation to the cost per ton mile. These two items, unearned time and cost per ton mile, rise and fall, concomitantly. Overtime, while not desirable to a great extent, represents a return in labor, and when judiciously expended, decreases the cost per ton mile.

### First Class Power Condition Necessary

Securing the maximum economical ton mileage depends, of course, on many things besides the proper loading of engines, but that is the big item. Keeping the power in first-class condition is an absolute necessity for success. Failure to do this, first of all, breaks up the uniformity in the system, since it leaves the tonnage rating of the different engines to the discretion of the various local officers. One engine is loaded a few tons lighter than another on account of its condition, and this is an incentive to the conductors and engineers to insist on cutting the rating of other engines on the least provocation. In short, when the power is not maintained in uniform and first-class shape the tendency is, on account of lack of uniformity and system and lack of means of a check, to decrease the train load gradually and constantly. Increasing the train load, and even maintaining it, requires constant systematic pulling against a strong current.

An efficient and even militant fuel agent, who reports to the ranking operating officer, is necessary in a campaign to increase as well as maintain the train load. The fuel agent is interested in the maximum ton mileage, which is really the key to fuel economy, and as a means to that end is vitally interested in the condition of the power and sees to it that the attention of the proper authority is brought to correct steam leaks and other defects, which cause a waste of fuel and loss in tractive effort. He receives a performance sheet daily from each division, showing the performance of various engines reduced to the ton mile basis and his traveling representatives are continually riding the engine that is not up to standard in performance. I doubt if it is possible under present operating conditions to attain the maximum ton mileage without the assistance of a vigorous fuel department.

Tightening up the schedules of fast freight trains and increasing the number of such trains, as well as passenger trains, bears a direct relation to the ton mileage. In handling live stock, which always calls for reduced tonnage rating, every effort must be made to confine its loading to a certain train or trains. This is a matter in which, on the large systems, the general officers must take a part so that a comprehensive scheme is worked out to the end that a minimum number of trains handle live stock and other perishable freight. The chief dispatcher also plays an important role here.

One of the worst tonnage leaks that only supervision from general officers will stop is the neglecting to wash out engines and make necessary running repairs at division points where shops and roundhouses belong to another road or are in charge of another division where the forces in connection therewith are not charged with resulting failures. If this matter could be reduced to dollars it would surprise general officers to know what heavy losses are incurred due to neglect to power on the part of roundhouse forces in the so-called "away from home terminals," not only in resulting failures of engines on the road, but the hauling of engines back or running light in the direction of heavy traffic to home terminals a hundred or more miles distant to apply

\*Abstracted from a paper presented before the convention of the American Association of Railroad Superintendents at Kansas City, Mo., on June 14.



a driving brass or cylinder head or to do some other light job on the pretext of the forces on neighboring divisions not having sufficient force or time to do the work.

### Do Not Load the Dispatcher with Routine Work

Not the least consideration is a chief dispatcher who fully realizes the great importance of the maximum loading of power. Managements that are keenly alive to the importance of this work will give this man sufficient clerical help to take care of his routine duties. Opportunities to conserve his resources in power are continually presenting themselves, and in many different ways, and where action can not be deferred. He must know at all times what is coming from the other divisions as well as from connections and, so far as is practicable, arrange for trains setting out short loads and empties to compensate by picking others up on the line. He makes a turn here and fills there, increasing and decreasing the tonnage in keeping with weather conditions. On account of there being no systematic means of checking to reveal false moves the gravity of the situation is not always fully appreciated. Loading down a chief dispatcher with routine work will always result in loss of ton miles.

The superintendent and trainmaster must have a daily check on the tonnage performance on the various districts of the division in the direction of tonnage movement, in a report compiled by the chief dispatcher showing the actual ton miles as compared with the potential and losses explained by trains. An additional means of check for as well as incentive to the local officers to watch the ton mileage closely is a weekly or ten-day comparative gross tonnage statement reduced to gross tons and cost per mile compared with previous periods and the same period of the previous year, gotten out in the general manager's office. This statement, with the monthly operating statistics, the latter not more than a month late, are most essential means of maintaining the ton mileage, but not sufficient in themselves to make any material increase for reasons already explained.

The density of traffic, passenger as well as freight, and their importance, particularly on single track, must necessarily be considered in arriving at the tonnage rating. The superintendent, like the chief dispatcher, can be so greatly engrossed with routine details and memorizing trivial statistics of past operations, that he will fail to keep closely in touch with the constantly changing conditions that affect his tonnage. During dull periods or on account of changes in the location of industries on the line, one local freight train crew can often be made to take the place of two by running one way one day and the other the next, and the superintendent, who is too busy with routine details and memorizing statistics, may not see the opportunity to cut off this local freight train or possibly a switch engine, when it presents itself. The superintendent is the only one on the division whose kaleidoscope furnishes a true perspective and comprehensive vision of the diverse operations and results. He must, therefore, personally supervise the work incident to co-ordinating the various branches. He must also personally supervise the work incident to the rating of engines; he can not successfully delegate all of this work to his staff and let it go that way. He may do so and get along smoothly, but if so, it will be at more or less expense to the company in excessive train miles and resulting increase in the ton mile cost.

The relation between train loading and net earnings is so constant and close that the only argument offered against increasing the train load, i.e., delay to cars, is manifestly out of order—indeed, by far the greatest single economy that has made it possible to offset the constant increasing expenses during the past two decades has been the fruition of the various methods and means to increase the train load.

The highest operating officer should know that every class

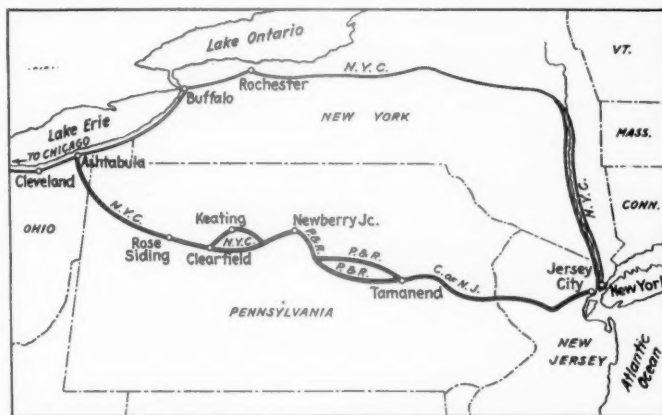
of engine has been thoroughly tested on the various grades and know that when operating conditions are similar the same class of engine pulls the same load on the same grade line on the different divisions. This is not only necessary but withal entirely feasible through proper checks and reports. Unless this provision is made big leaks are bound to ensue in the net revenue through lost ton miles.

Finally, the thing to comprehend fully is that the train and engine men are contractors. The railroads furnish the appliances and actually contract with them to move a cargo a given distance for a fixed sum per mile or hour and the unit in this case is, unfortunately, not the ton or ton mile, but the cargo. It costs just as much to move 50 cars in one cargo-train as 100 and there would be just as much reason ordinarily in light loading a ship in New York to Liverpool, when the freight is piled on the dock awaiting movement, as there is for the daily light loading of the railroad's units, trains.

## N. Y. C. Proposal to Acquire P. & R. and C. of N. J.

AT HEARINGS on the consolidation plan before the Interstate Commerce Commission, President A. H. Smith of the New York Central expressed the desire of his company to acquire the Philadelphia & Reading and the Central of New Jersey to give it an additional trunk line into New York and thus to relieve the company's present line across New York State which is rapidly reaching its capacity.

President Smith's proposal was further elaborated in a prepared interview which was published in the New York Times of July 22. The proposed new trunk line extends eastward from Ashtabula, Ohio, over an existing New York Central line, which is operated in connection with trackage rights over the Pennsylvania and the Buffalo, Rochester & Pittsburgh for short distances, to Newberry Junction, Pa.,



Route Which New York Central Desires to Acquire

where connection is made with the Philadelphia & Reading. Thence to the New Jersey side of the Port of New York the route runs via Tamanend, Pa., and the Central of New Jersey. In the event that the two roads were acquired by the New York Central, Mr. Smith indicated that new lines would be built to avoid the present operation by trackage rights over the Pennsylvania and the Buffalo, Rochester & Pittsburgh. The distance from New York to Ashtabula by this route is 528 miles—40 miles shorter than the present New York Central main line. The summit elevation on the Philadelphia & Reading-Central of New Jersey line is 1,539 ft. as compared with 996 ft. on the New York Central's present

line, but is comparatively lower than the summit elevation surmounted by several other trunk lines.

A considerable volume of freight at the present time moves over the route which the New York Central desires to own. This movement includes bituminous coal from the Clearfield district to industrial sections on the Philadelphia & Reading and the Central of New Jersey and to the Port of New York; anthracite from the Reading fields to New York Central points, including the Great Lakes; and merchandise between the industrial areas in eastern Pennsylvania and New Jersey to New York State and western points and all-rail and ex-lake grain.

The New York Central, however, if it could acquire these two roads, would use the route also for direct east-west traffic to and from New York, including not only freight but express and passenger as well, according to President Smith. The New York Central would be prepared to spend con-

and the commuters can move into or out of the city as and when they desire," he said.

One of the first remedies to bring about relief in this direction, in his opinion, would be the freeing from passenger traffic of the present railroad facilities along the New Jersey water front by a more modern method of crossing the Hudson river than that at present provided—by a bridge or additional tunnels. The present facilities, freed from dealing with passenger traffic, could be devoted to handling freight.

The Port of New York Authority, through its counsel, Julius Henry Cohen, has opposed the acquisition of the Central of New Jersey, particularly that road's extensive terminals at the Port of New York, by the New York Central as counter to its plans for the development of the port. Mr. Smith says that it should make no difference in the final working out of the Port Authority's plan how the Central of New Jersey is owned and that whatever can be lawfully done with this property by the Port Authority can be accomplished under one ownership as well as another.

Agnew T. Dice, president of the Philadelphia & Reading, in a statement issued on July 23, opposed the acquisition of his road and the Central of New Jersey by the New York Central. "All that is necessary to utilize the Haucks-Newberry Junction-Clearfield route is to forward the freight that way," he said. "With the physical facilities existing and the joint through rates already established, the New York Central is, of course, in position to utilize this route just as effectually as would be the case if the entire trackage were owned and operated by it. This route, with all the advantages pointed out by the New York Central, is not utilized to anything like its capacity.

"It should be pointed out that the plan of the New York Central, predicated on the alleged need for the Clearfield route, would necessarily involve the taking over of the important terminals of the Central of New Jersey at New York and utilizing them primarily for the handling of traffic via the Clearfield route.

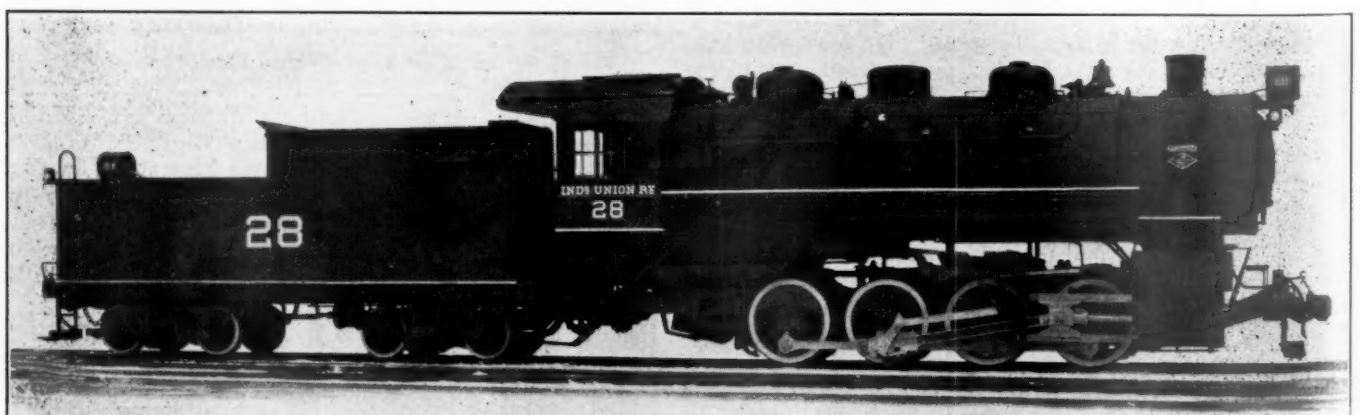
"At the present time, as the shipping public of Philadelphia, New York and the country generally well knows, these terminals, like the terminals of the Philadelphia & Reading, have been kept open without preference or discrimination for all trunk line connections.

"It would be a great disadvantage not only to the Philadelphia & Reading and its shippers, but to the trunk lines serving the Atlantic seaboard and to the entire shipping public, to have the New York terminals of the Central of New Jersey in the possession of the New York Central, thus to a great extent limiting their availability for other lines."

EXISTING NEW YORK CENTRAL OPERATED LINES		
Railroad	Termini	Mi. of Road
New York Central.....	Ashtabula to Rose Siding.....	129.67
New York Central—trackage over P. R. R. (for which will be substituted owned lines when constructed) .....	Rose Siding to Fall Creek.....	20.91
New York Central—trackage over B. R. & P. (for which will be substituted owned lines when constructed) .....	Fall Creek to Clearfield.....	30.64
New York Central (low grade line) .....	Clearfield to Keating.....	52.98
New York Central—trackage over P. R. R. (for which will be substituted owned lines when constructed) .....	Keating to Lock Haven.....	44.96
New York Central .....	Lock Haven to Newberry Jct....	18.21
Total .....		297.37
Total existing New York Central operated lines and trackages....		297.37
ADDITIONAL LINES THAT ARE REQUIRED TO BE ASSIGNED TO THE NEW YORK CENTRAL TO COMPLETE THE ROUTE		
Philadelphia & Reading.....	Newberry Jct. to Tamanend....	95.60
Central of New Jersey.....	Tamanend to Jersey City.....	135.20
Total Mileage Ashtabula, O., to New York.....		528.17

siderable sums for additional tracks, yards, terminals and other facilities to make the route capable of handling heavy traffic.

Mr. Smith expressed the opinion that one of the most serious problems which will have to be faced within the next 10 years is the handling of passengers in New York. "It will be a serious question whether both the through passengers



Eight-Wheel Switching Locomotive for Indianapolis Union Railway, Built by Lima Locomotive Works



## General News Department

**The Traffic Club** of New York on July 24 had its annual outing, consisting of a six-hour inspection trip of the Port of New York on board the Erie ferryboat "Youngstown." About 1,000 members and guests attended.

**The revision of rule No. 14**, code of car service rules, recently proposed by the American Railway Association, has been adopted, by letter ballot, by a large majority, and goes into effect August 1. It places upon the originating road the cost of transferring a load of freight when the transfer has been necessitated by the omission of proper inside door protection.

**W. G. Lee**, president of the Brotherhood of Railroad Trainmen, who has been ill for some time, has been granted an indefinite leave of absence by the board of directors of the trainmen's organization. Mr. Lee has entered a hospital at Cleveland, where he will submit to an operation. T. R. Dodge, assistant president, has been appointed acting president during Mr. Lee's absence.

**For unlawfully stopping** a freight train by opening an air valve, Reuben Carter, a negro, was brought into court at Danville, Va., on July 19, and was sentenced to two years imprisonment. The police agent of the Southern Railway said, in connection with the prosecution, that the stopping of trains by tramps, for no other purpose than to enable them to get off, was becoming a serious annoyance.

**James B. Shinafelt** and **H. H. Fink**, locomotive engineers on the Middle Division of the Pennsylvania Railroad, have been recommended by Superintendent William Elmer for awards of medals for heroic acts in life saving. This action is taken under the resolution recently adopted by the directors of the railroad company. Shinafelt jumped into the river and saved a boy from drowning, and Fink saved a woman from being struck by a freight train.

### Two Small Canadian Railways

#### Ask to Be Absorbed by C. N. R.

Lord Ranfurly, president of the Atlantic, Quebec & Western, and E. B. Read, president of the Quebec Oriental and managing director of both companies, have written a letter to the Toronto Globe proposing that the Canadian government acquire their properties to be operated as a part of the Canadian National Railways.

The two railways form a through line from Gaspe, P. Q., to a connection with the Canadian National (Intercolonial) at Matapedia. The Atlantic, Quebec & Western runs from Gaspe to New Carlisle (102.5 miles) and the Quebec Oriental thence to Matapedia (100 miles).

Lord Ranfurly and Mr. Read tell in detail the difficulties these companies have faced. They have never paid any interest on their bonds. They have been embarrassed by orders of the Railway Commissioners which for lack of funds they cannot carry out and are faced by the provision of the Railway Act of 1911 which makes government advances a prior lien on a property and payable at once when an order of the Railway Commissioners is not obeyed. Steamers subsidized by the government ply the surrounding waters in the summer and take lucrative traffic away from the railways and then tie up in the winter, leaving the railroads to keep going with the light traffic, severe operating conditions and great expense then existent.

The properties are not, however, it is said, in bad physical condition. On the contrary the writers say they are fully up to the standard of branch lines in Canada and better than some main lines. The railways are said to be necessary to the 70,000 in-

habitants of their territory which, furthermore, has great possibilities for development as a tourists' country and as an ocean port.

They ask accordingly that the government purchase these railroads, saying that this can be accomplished under terms which would not require any interest payments for a period of years.

### The Relation of Draft Gear

#### Capacity to Rough Handling

The study of the rough handling of cars made by the Freight Claim division of the American Railway Association shows that speed is the principal contributing factor, followed closely by draft gear capacity. It has been found that when cars collide, the forces between them increase at a much greater rate than the velocities. Tests made by the Inspection and Test section of the United States Railroad Administration and data of the Norfolk & Western on two 40-ton cars equipped with draft gears which close at an impact velocity of two miles per hour, show that when the cars traveled at one mile per hour the reaction forces amounted to 20,000 lb., at 1½ mi. per hour, 40,000 lb., at two miles per hour, the impact velocity at which the gears close, 70,000 lb., and at 2½ mi. per hour, 630,000 lb. This shows that after the gears close an increase of only one-half mile per hour or 25 per cent in speed resulted in an increase in the reaction forces of 560,000 lb., or 800 per cent. Another test using two 57½-ton cars equipped with draft gears closing at a speed of four miles per hour showed that at four miles per hour the reaction forces were 370,000 lb., and at 4½ mi. per hour, 1,140,000 lb. In this case with an increase of ½-mi. per hour or 12½ per cent in speed, there was an increase of 770,000 lb. or 208 per cent in reaction forces, and that after the draft gears go solid they no longer serve their purpose.

### Coal Operators Defend Assigned Car Ruling

The Central Pennsylvania Coal Producers Association in reply to a petition of the railroads asking the Interstate Commerce Commission to reopen and to reconsider its order abolishing the assigned coal car practice effective September 1 urged that the Commission deny this and similar petitions. Referring to a declaration made by the railroads that putting the order into effect now would demoralize traffic conditions in view of the record-breaking burden of transportation, the coal producers' association asserted that the status of the carriers fully was known in ample time to bring their alleged crisis to the attention of the Commission before the record in the proceeding was closed.

The association also denied the statement made by a committee of counsel for the railroads that discarding the assigned car rules will bring an increase of cost to the public amounting to \$100,000,000 annually.

"To abolish the assigned car evil," the association's brief stated, "according to the record made by the New England carriers requires a storage of 26 per cent of their consumption. The cost of storage would be 60 cents per ton. On a country-wide basis the total storage would amount to 43,151,200 tons. At 60 cents a ton the storage cost would be \$25,890,720. Half of the amount already is stored. The additional cost to the public, if there were no other considerations to wipe it out, is therefore but half of the amount indicated, or \$12,945,360. Such other considerations, referred to in detail, will more than wipe out this figure, it was asserted.

Petitions for rehearing have been received by the Commission from the Berwind-White Coal Mining Company, Westmoreland Coal Company, New River & Pocahontas Consolidated Coal Company, Pennsylvania Coal & Coke Corporation, the Public Service Electricity Company of New Jersey.

## Traffic News

The New York Central established a record by unloading 83,086 tons of iron ore from 10 steamers into 1,386 freight cars on July 7 at Ashtabula Harbor, Ohio.

The movement of freight, westbound, over the Pittsburgh Division of the Pennsylvania Railroad, on July 3, was the heaviest on record for a single day, 5,091 cars passing Gallitzin. This is 239 more cars than on the heaviest preceding day, which was September 15, 1919.

The Georgia Railroad is establishing test pastures at points located along the road with the idea of stimulating interest in better pastures. Representatives of the railroad, county agents and specialists from the state agricultural department are conferring on the subject.

The railways of Mexico will give special rates for patrons who wish to view the total eclipse of the sun on September 12. The government is co-operating with scientists who wish to observe the sun from the mountains of northern Mexico by allowing their instruments to enter the country without duty.

Rehearing of the recent coal-car order (noticed in the *Railway Age* of July 21, page 132), has been asked for not only by the railroads but also by the U. S. Steel Corporation, the Bethlehem Steel Corporation and their subsidiaries; and also by the Seaboard By-Product Coke Company, Chicago By-Product Coke Company, Donner-Union Coke Corporation and the Rainey-Wood Coke Company.

### Furniture Warehousemen Advocate

#### Fair Trial of Transportation Act

Following an address before the annual convention of the National Furniture Warehousemen's Association at Mackinac Island, Mich., on July 8-12 by Frank E. Robson, general counsel of the Michigan Central, who spoke under the auspices of the Public Relations Committee of the Warehousemen's Association, that organization adopted a resolution advocating the further trial of the Transportation Act as follows:

"Resolved: That the National Furniture Warehousemen's Association hereby declares itself in favor of a full and fair development of the purposes of the Transportation Act of 1920, and looks with disfavor on all attempts to hamper and obstruct the proper operation of the railroads themselves."

This meeting was also addressed by A. L. Green, special representative of the American Railway Association, who outlined methods of packing furniture in order to withstand shipment and reduce claims.

### Congestion at Camden Ferries

The ferries on the Delaware River from Camden, N. J., to Philadelphia, which on a holiday or a Sunday are always crowded with automobiles returning from the seashore, delivered into Philadelphia last Sunday, between 4 p. m. and 10 p. m., about eighteen thousand cars. The Philadelphia Public Ledger, reporting the incident, says that at midnight 10,000 automobiles were waiting to be taken on to the boats. A detail of 25 policemen in addition to the traffic policemen were required to straighten out the tangle. Motorists caused confusion by tooting their horns when it was announced that Federal and Market streets, the main traffic arteries leading to the ferry, were closed to pleasure cars and that farmers' trucks loaded with produce would be given preference. The chief of police said he considered the moving of foodstuffs more important than the transportation of pleasure seekers. In numerous instances drivers who waited in line several hours caused delay by falling asleep at their wheels. It required nearly three hours for cars at the end of the line to get across the river.

The ferry boats were operated on a two-minute schedule and each boat carried twenty automobiles. On Saturday for a part of the time the Pennsylvania Railroad assigned two ferryboats to carry automobiles alone, but that only partly relieved the congestion.

### Hearing on Unloading Costs at U. S. Yards

Examiner Hillyer, of the Interstate Commerce Commission, held a hearing at Chicago on July 18 on the charges for the loading and unloading of livestock in Chicago. The hearing was a result of the proposal of the Union Stockyards and Transit Company to establish a charge against the roads of \$1 a deck for unloading or loading double-deck stock cars, which charge has previously been fixed by the Interstate Commerce Commission at \$1 per car for all types of cars. The hearing was in a case which involved all stock yards west of the Illinois-Indiana state line. O. T. Henkle, general manager of the Stockyards company produced evidence to show that the movement of stock in double-deck cars at the time of the 1921 adjustment was slight, while at the present time about five per cent of the stock is received in double deck cars, and produced data to show that three times as much labor is required to load and unload double-deck cars, that the risk of damage to both employees and animals is greater. The railroads produced evidence to show that the charge of \$1 a car was too high and cited an investigation which showed that in a study of a week's loadings and unloadings, covering the handling of 6,279 inbound and 417 outbound carload shipments, the cost at the current rate of 53 cents an hour for the actual time consumed amounted to only 11.2 cents a car for loading and 5.9 cents a car for unloading.

### Southwestern Freight Car Situation

#### Discussed at Ft. Worth

The freight car needs and facilities of the four southwestern states, Oklahoma, Arkansas, Louisiana and Texas were discussed at length at the regular meeting of the Southwest Regional Advisory Board, Car Service Division, American Railway Association, which was held at Ft. Worth, Texas, on July 12. This was the second formal conference of the organization, established May 16 of this year at a meeting at Dallas, and some 80 representatives of industries and railroads, about equally divided as between shippers and carriers, were present. Reports from the 13 commodity committees of the advisory board showed no instance of a serious shortage of cars.

Donald D. Conn, chairman of the Public Relations Committee of the American Railway Association and G. C. Randall, of Dallas, Texas, district manager of the Car Service Division, met with the board. Mr. Conn assured the advisory board of the Car Service division's readiness to lend the weight of its influence to bring the public into a state of mind to make purchases at such times as to assist in the elimination of seasonal causes of car service congestion.

During the session, the board adopted a proposed code to govern the procedure and methods of the organization that includes a statement of its purpose to provide a forum where shippers and carriers may find means to secure better mutual understanding of transportation problems; to promote general efficiency in car distribution and to provide an informal adjustment service. The organization's plans provide for a board of 34 members to include the chairmen of the 17 standing committees; three officers, including the chairman, vice-chairman and secretary; four members representing the railroad regulatory bodies of Oklahoma, Louisiana, Arkansas and Texas; one member representing the Federal Reserve Bank of the 11th Federal Reserve District and nine members at large to be elected by the board. Fourteen standing committees representing cargo commodities that already have been formed and that were represented at the recent session, include miscellaneous; agricultural products; cement products; coal, coke and lignite; cotton and cotton linters; cottonseed products; grain and hay; livestock; lumber products; petroleum products; sand, stone and gravel; sugar molasses and cane; sulphur and heavy clay products.

R. H. KEAYS, assistant general superintendent for the Ulen Contracting Corporation, contractor for the Shandaken tunnel for the Catskill water supply of New York City, has been appointed chief engineer of the Moffat Tunnel Commission. V. A. Kauffman, who had charge of the surveys for the Moffat tunnel, has been appointed assistant chief engineer of the commission. L. D. Blauvelt, state highway engineer of Colorado, has been appointed a member of the consulting board.



## Commission and Court News

### Interstate Commerce Commission

The commission has decided that the Upper Merion & Plymouth Railroad is a common carrier subject to the Interstate Commerce Act and eligible to enjoy its sanctions. The line is located in Montgomery county, Pa., about 11 miles of road, and has interchange connections with the Pennsylvania and the Philadelphia & Reading on either side of the Schuylkill River. On August 9, 1922, the company filed a complaint alleging that the connecting carriers refused to join in through rates.

The petition of the American Railway Express Company for rearrangement and modification of the commission's order prescribing through routes and rates between points on the lines of the Southeastern Express Company and those on lines of the American express has been denied. The commission holds that Section 15 of the Interstate Commerce Act providing that a carrier by railroad shall not be required, without its consent, to accept a short haul when it could have a longer one, is not applicable to express companies.

Referees appointed by the Interstate Commerce Commission have reported that the Nevada-California-Oregon should be reimbursed by the Director General of Railroads for a net railway operating deficit incurred during federal control amounting to \$26,305.44; for depreciation of way and structures fixed at \$7,210.21 and for failure to return the carrier's property in as good repair and complete equipment as at the commencement of federal control, \$14,456.92 subject to such adjustment as the accounting rules of the Commission governing these items may require.

### Joint Through Express Rates to Southeastern States

The commission's order in the controversy between the Southeastern Express Company and the American Railway Express Company, requiring them to agree on through routes and joint rates, has been made permanent; and the new tariffs must be made effective on or before October 20. Through routes must be made between all points in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut, New York, N. Y., and all points on the direct routes of the American between New York and Washington, on the one hand, and all points on the main line of the Southern Railway, from Washington to and including Birmingham, Ala., on the other, with transfer between the American express and the Southeastern express at Washington. The rates between the points named must not exceed the rates in effect between such points over the routes now used, and the shipper may designate in writing the routing which he desires for his shipments.

### State Commissions

The Alabama public service commission has issued an opinion to the effect that its general order requiring passenger coaches operating in Alabama to be screened applies to such coaches when used in interstate as well as intrastate commerce.

The Tennessee Corporation Commission has made permanent its temporary injunction prohibiting discontinuance of public service on the Marion & Rye Valley Railroad. The injunction is against Floyd L. Knight, trustee, and Minnie L. Knight. The Knights, however, have asked the Interstate Commerce Commission for authority to abandon. The property is being operated by Floyd L. Knight as trustee for the bondholders, having been sold by order of the Circuit Court of Smyth County in April. Mrs. Knight was the highest bidder, but she has never completed the purchase. Complaint was brought before the Corporation Commission by the American Table Company and other shippers. The railroad is eighteen miles long between Marion and Sugar Grove. At Marion it connects with the Norfolk & Western.

## Foreign Railway News

### Government Operation to End in Austria

According to press dispatches from Vienna, the Austrian State Railways will be turned over to a newly created body to be operated along purely commercial lines. The Austrian National Assembly is said to have passed a bill to this effect on July 20. The government hopes by this means to scale down and eventually to eliminate entirely the annual deficit of some two trillions of depreciated paper crowns.

### Paris-Orleans Locomotives Will

#### Make 90 Miles an Hour

High speed tests of the locomotive ordered by the Paris-Orleans Railway from the General Electric Company will probably be held at Erie, Pa., some time in August. This locomotive, now nearly completed, will be a 120-ton machine of special construction, operating at 1,500 volts. It will be equipped with gearless motors, two 3-axle driving trucks, a 2-axle guiding truck at each end and two box cabs. The length over all is 62 ft. Speeds in excess of 90 miles an hour are expected.

### Britain Speeding Up Passenger Trains

On July 9 the British railways put into operation their full summer passenger schedule, including a number of new trains and accelerated timings for trains already in operation. The Great Western will have a new train from Cheltenham to Paddington (London) which will make the run from Swindon to Paddington (77¼ miles) in 75 minutes or 61.8 miles per hour, the fastest train in the world. Other trains on the G. W. R. include a non-stop train to Exeter (173¾ miles), a non-stop train to Torquay (200 miles in 215 minutes) and many others. On the other railways similar improvements have been effected by the addition of new trains and the speeding up of existing schedules ranging from five minutes to more than an hour.

### Six Months' Gross of British

#### Railways Shows a Decline

The four great British railways during the first six months of the current year earned a gross operating revenue of 96 millions sterling, as against 100 millions for the first half of 1922, according to Modern Transport. The reduction is largely due to the decreases in rates which have been made. The second half of the year generally brings in greater gross revenues than the first half. Last year £129,000,000 was earned in the second half of the year as against £100,000,000 in the first. The contribution of the four companies to the total gross revenues in the first half of 1923 was exactly the same percentage as in the first half of last year, viz., 41 per cent by the London, Midland & Scottish, 31 per cent by the London & North Eastern, 16 per cent by the Great Western and 11 per cent by the Southern.

### Attempt to Put Bonds of

#### Ecuadoran Railway on Paying Basis

Several officers of the Guayaquil & Quito Railway Company, headed by President Archer Harman, Vice-President T. H. Powers Farr and Erskine Hewitt, one of the directors, sailed on July 21 for Ecuador. They plan to inspect the 300 miles of railroad and to confer with the officials of the government of Ecuador.

One of the purposes of the trip, according to Vice-President Farr, will be to ascertain what can be accomplished toward putting the bonds of the company back on a paying basis. He stated that the railroad was now earning practically enough for interest charges, if it were not for the unfavorable exchange rates. The earnings when transferred into dollars decrease so materially that it is impossible to make interest payments.

A week after the sailing of this party John Hord, recently appointed financial adviser to the government of Ecuador, will

leave New York for Ecuador. The officers of the railroad believe that if he is successful in his mission to stabilize the currency of Ecuador his efforts will be of great service to them in putting the bonds on an interest paying basis.

Although the bonds are guaranteed by the government, interest payments have not been met in a number of years, notwithstanding the fact that bondholders in the United States and in England have organized from time to time in an effort to force payments. The total bonds outstanding aggregate \$13,000,000.

### Progress Report on South African Electrification

The monthly report of the general manager of the South African Railways & Harbors, gives the following data with reference to electrification work undertaken on the railways' Natal main line:

**COLENZO POWER HOUSE.**—21,800 cubic yards of excavation work had been carried out and 15,700 cubic yards of concrete placed in position. 420 tons of steel work had been erected. A contract for 1,000,000 bricks has been placed with a South African firm.

**ALTERATIONS TO STATIONS.**—Alterations to stations have been completed at Colenso, Naval Hill, Heavitree, Lowlands and Ennersdale. Work is proceeding at 13 others.

**TRANSMISSION LINE.**—Survey work for the route of the transmission line has commenced.

**GENERAL.**—926 trucks of material were dealt with at Colenso during the month.

**STAFF.**—At the end of April, 400 Europeans and 2,005 natives were engaged on the electrification work.

### Belgian Railway Deficit Cut in 1922

Owing to increasing receipts in 1922 the annual deficit of the Belgian State Railways was cut to 33,000,000 francs (\$1,452,000 at the present rate of exchange), according to a late official estimate, received by the Department of Commerce. The deficit in 1913 was 15,404,861 francs. Actual receipts for 1922 amounted to 1,109,817,540 francs or 109,817,540 francs above the budget estimate. During the first two months of 1923 the receipts exceeded the estimate by 23,870,000 francs. Progress in lowering expenses was made last year but increased fuel costs and wages may result in increasing expenses in 1923.

Fuel consumption per locomotive kilometer in 1921 was reduced 22 per cent below that for 1920, as the result of better attention by employees, encouraged by bonuses for good records in fuel economy. The consumption in 1922 was still, however, nearly 29 per cent over that of 1913, as the result of using higher-powered locomotives. Complete statistics on fuel consumption for 1922 are not yet available. The sharp rise in coal prices is due to difficulty in obtaining coal from the Ruhr, the uncertainty of future supplies and the shortage of Belgian coal.

Strenuous efforts to reduce the personnel resulted in only 100,906 officials and employees being provided for in the budget for 1922, compared with 115,000 in 1921. The eight-hour law requires a larger number than in 1913 when there were 75,000 employees. Increased cost of living has caused the employees to demand more pay and this may mean increased expenses to be met from the state treasury.

There were 5,433 locomotives of 117 types owned by the Belgian Railway Administration on December 1, 1922. Of these, 3,488 were in service, 1,122 under repair and 823 held for sale. Such a variety of power units resulted from the rapid accumulation of equipment after the Armistice and makes upkeep expensive; 1,916 of these locomotives of 16 types designated as "standard" have been selected as a nucleus of power equipment and the remainder will be replaced gradually by units of standard types.

The number of freight cars has increased from 92,857 in 1914 to 122,000 in 1922, with 12,600 still due from Germany. Since 100,000 cars are considered sufficient with an additional 10,000 for exceptional needs, there is a surplus of equipment which hinders traffic.

One thousand, three hundred and fifty-five passenger train cars have been added since 1921, bringing the total to 11,253, almost equal to the 1914 figure of 11,810 cars. The variety in types of equipment causes difficulty in maintenance. The plan for standardizing equipment which is expected to result in more economical operation has been started by the sale of 749 locomotives, 924 tenders and 10,000 freight cars for scrap.

## Equipment and Supplies

### Locomotives

THE NEW YORK CENTRAL has ordered 5 Shay geared locomotives from the Lima Locomotive Works.

THE CALDAS RAILWAY, Colombia, has ordered 1 Mikado type locomotive from the American Locomotive Company.

THE SEWELL VALLEY, reported in the *Railway Age* of June 16 as inquiring for 1 Mikado type locomotive, has ordered this equipment from the Lima Locomotive Works.

### Freight Cars

THE CENTRAL OF NEW JERSEY is inquiring for repairs to 300 box cars.

THE MISSISSIPPI RIVER & BONNE TERRE is inquiring for 50 box cars.

THE PERE MARQUETTE is inquiring for 500 steel underframes for refrigerator cars.

THE GULF TIE COMPANY is in the market for a small number of bolster and tie cars.

THE ANACONDA COPPER MINING COMPANY has renewed its inquiry for 2 ballast and 6 flat cars.

THE DELAWARE, LACKAWANA & WESTERN is inquiring for 200 refrigerator cars of 40 tons' capacity.

THE CANADIAN NATIONAL, reported in the *Railway Age* of June 23 as inquiring for 1,000 automobile cars of 40 tons' capacity, has renewed its inquiry for this equipment.

THE SOUTHERN RAILWAY, reported in the *Railway Age* of July 14 as inquiring for prices on 1,000 steel center constructions for box cars, has placed the order for this equipment.

THE CANADIAN PACIFIC is having 1,000 steel underframe, double sheathed box cars 36 ft. long, also 300 steel frame, automobile cars 40 ft. 6 in. long, built in its Angus shops.

THE STANDARD OIL COMPANY OF NEW JERSEY ordered 12, 50-ton steel dump cars from the American Car & Foundry Company. This was incorrectly reported in our issue of July 7, as tank cars.

THE NEW YORK CENTRAL, reported in the *Railway Age* of July 14 as having placed an order with the Standard Steel Car Company for converting 500 old box cars to double deck stock cars, has transferred this order to the Standard Tank Car Company. This company has also given a contract to the Merchants' Dispatch Transportation Company for the repair of 500 freight cars.

### Signaling

THE LONG ISLAND is to instal automatic block signals on its four track electric line between Hillside, N. Y., and Floral Park, 15 miles. The contract includes two electro-pneumatic interlockings, one at Queens for 10 switches and 14 signals, and one at Floral Park, for 19 switches and 19 signals; and also the remodeling of an existing mechanical interlocking at Hollis.

The Union Switch & Signal Company has the contract for the complete installation of this work. The automatic signals will be Style "B" 110 volts, 25 cycle, supported on signal bridges spanning the four tracks. As an emergency power supply feature, a frequency changer will be installed at each interlocking to convert the 110 volts, 60 cycle City supply to 110 volts, 25 cycle. These converters will start automatically upon failure of the regular 25 cycle supply. The signal transmission line will be fed from a 2,200 volt 25 cycle supply obtained from Woodhaven Junction.



# Supply Trade News

**A. B. Fletcher**, president of the **Eppinger & Russell Company**, New York, died in his home in that city on July 5.

**W. G. Sharretts** has been transferred from the Atlanta territory and is now in charge of the New York City office at 50 Church street, of the **Western Wheeled Scraper Company**, Aurora, Ill.

**H. C. Jones**, whose resignation as vice-president and advertising manager of the **Inland Steel Company**, Chicago, was announced in the *Railway Age* of June 30, has become president of the **Mid-west Forging Company**, Chicago Heights, Illinois.

**John Brunner**, assistant inspecting engineer of the **Illinois Steel Company**, with headquarters at Chicago, has been promoted to inspecting engineer, with the same headquarters, succeeding **P. E. Carhart**, retired. Mr. Brunner will be succeeded by **S. S. Crane**.

**William E. Trubee** has been appointed district representative of the **Howe Waste & Packing Company**, Hope Valley, R. I. Mr. Trubee's headquarters are at 1043 Grand Central Terminal, New York City. Until July 1, of this year, he was the New York representative of the **Franklin Manufacturing Company**, Franklin, Pa.

**W. E. Hedgcock**, purchasing agent of the **American Car & Foundry Company**, New York, has been promoted to special assistant to the vice-president in charge of sales, with the



W. E. Hedgcock

title of assistant vice-president. Mr. Hedgcock was born in Jeffersonville, Ind., and was educated in the public schools of his native town. In 1887 he entered the employ of the **Ohio Falls Car Company**, Jeffersonville. This company later became a part of the **American Car & Foundry Company**. On the foundation in 1899 of the **American Car & Foundry Company**, Mr. Hedgcock was appointed general purchasing agent and transferred to St. Louis, Mo. In 1918 he was again transferred to

become head of the purchasing department for the same company at New York, and now becomes assistant vice-president as above noted.

The **Kendell Motor Products Company**, Ft. Wayne, Ind., has been organized to take over the patent rights and business of the **Kendell Engineering Corporation**, manufacturers of piston rings. The directors of the new corporation are **G. A. Smiley**, **C. P. Burns**, and **R. L. Kendell**, the latter being sales and advertising director.

The **W. J. Conners Car Company, Inc.**, Grand Island, New York, has been incorporated in the state of New York to build railway cars. The directors are **William J. Conners**, **William J. Conners, Jr.**, and **Donald C. Tuppen** of Buffalo, N. Y. **Falk, Phillops & Schlenker**, 804 Morgan building, Buffalo, are attorneys for the corporation.

The **Standard Railway Equipment Company**, the **P. H. Murphy Company** and the **Hutchins Car Roofing Company** have perfected an arrangement for the exchange of patent licenses relating to the manufacture of their car roofs whereby

each company is now in a position to manufacture roofs without regard to patents owned or controlled by the other companies mentioned.

**W. A. Thompson**, controller of the **Allis Chalmers Manufacturing Company**, Milwaukee, Wis., has been promoted to secretary and **Raymond Dill**, assistant secretary-treasurer, has been promoted to treasurer, succeeding **H. Woodland**, secretary-treasurer, deceased. **J. A. Keogh** has been appointed assistant secretary. **E. A. Stuart**, auditor, has been promoted to assistant treasurer.

**J. R. Fairman**, field representative in Kansas and Missouri of the **Portland Cement Association**, Chicago, has been appointed district engineer in charge of a new office recently opened in Birmingham, Ala.; **James A. Hudson**, field representative in Mississippi, has been appointed district engineer in charge of a new office in Memphis, Tenn., and **P. H. Johnston**, field engineer in Florida, has been appointed district engineer of a new office in Jacksonville.

**William James Harris**, assistant purchasing agent of the **American Car & Foundry Co.**, has been appointed purchasing agent, with office at New York.



W. J. Harris

He was born on April 26, 1874, at Swansea, Wales, and came to the United States in 1880. Mr. Harris was educated in the public and high schools of Berwick, Pa. He began work in the rolling mills in Berwick and during that service took private lessons, at night, in a business course. In 1889 he entered the employ of the **Jackson & Wooden Company**, Berwick, as a shipping clerk in its rolling mill and when that company was taken over by the **American Car & Foundry Company**, he became bookkeeper for the latter company.

## Locomotive Orders and Deliveries in June

The Department of Commerce has prepared the following summary of locomotive orders and deliveries for June:

	June, 1923	May, 1923	June, 1922	Six months' total January to June	
				1923	1922
Shipments:					
Domestic .....	221	228	67	1,332	220
Foreign .....	11	10	47	73	142
Total .....	232	238	114	1,405	362
Unfilled orders:					
(End of month)					
Domestic .....	1,854	2,045	495	....	...
Foreign .....	104	105	101	....	...
Total .....	1,958	2,150	596	....	...

THE **DIXIE RAILWAY CLUB** of Mobile, Ala., on a proposal presented by **G. P. Brock**, president of the club, on July 13, has adopted resolutions to the effect that the members of the club will, when driving any motor vehicle, bring it to a stop before crossing over a railroad at grade; when riding in such a vehicle driven by another will "use our influence upon the driver to cause the car to be stopped"; and before employing any individual with a motor vehicle will request that this safeguard be adopted, and will patronize only those who comply with this request.

## Railway Construction

**ARKANSAS SHORT LINE.**—Construction of a line extending from a connection with a logging road at McCormick, to a connection with the Missouri Pacific Railroad at McDonald, Ark., has been disapproved in a tentative report to the Interstate Commerce Commission by Examiner Haskell C. Davis. Examiner Davis stated that the territory obviously could not support the proposed line and an extension of the Cairo, Truman & Southern, already projected and authorized by the Commission.

**ATCHISON, TOPEKA & SANTA FE.**—This company has awarded a contract to the Senne Construction Company, Topeka, Kan., for the razing of the old Santa Fe office building at Topeka, Kan., which is to be replaced by a new 10-story structure, as reported in the *Railway Age* of March 31.

**ATCHISON, TOPEKA & SANTA FE.**—This company has been authorized by the Harbor Commission of California to construct an extension from the present terminus of the Municipal Belt Line at Wilmington, Cal., north to a connection with the new Santa Fe line from El Segundo, Cal., to Wilmington. The extension will be approximately 3,000 ft. long and will cost \$20,000.

**ATCHISON, TOPEKA & SANTA FE.**—This company has asked authorization from the Interstate Commerce Commission to construct a branch line from its line between Kaw and Soldeni, Okla., to the east line of Kay county, Okla., a distance of about seven miles, to serve the western part of the Hickman oil field.

**ATCHISON, TOPEKA & SANTA FE.**—This company has awarded a contract to the Truscon Steel Company for the material and erection of two of its standard steel buildings 50 ft. by 64 ft. and 32 ft. by 150 ft. respectively for its timber preserving plant now under construction at National City, Cal.

**CINCINNATI RAILROAD TERMINAL DEVELOPMENT COMPANY.**—A new company by this name has been organized at Cincinnati, Ohio, with a capital stock of \$250,000, and proposes the construction of a new union station and freight terminal in that city. The officers of the company are: H. D. Crabbs, president; John Omwake, vice-president; R. A. Past, secretary and M. J. Frieberg, treasurer.

**CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.**—This company contemplates the construction of a new bridge across the Ohio river at Louisville, Ky., adjacent to the present structure.

**DETROIT TERMINAL.**—This company has awarded a contract to the Roberts & Schaefer Company, Chicago, for the installation of an electric cinder handling plant at Detroit, Mich.

**ILLINOIS CENTRAL.**—This company plans the construction of a two-story passenger station, 380 ft. long, at Baton Rouge, La. A two-story freight station and office building will also be constructed.

**ILLINOIS CENTRAL.**—This company will close bids August 2 for the construction of a brick freight and passenger station at Bethany, Ill., to cost approximately \$20,000.

**LOUISVILLE & NASHVILLE.**—This company has awarded a contract to the Frankfort Supply Company, Frankfort, Ky., for the excavation of the site for a new terminal at West Frankfort, Ky.

**MINARETS & WESTERN.**—This company plans the construction of a new line 39 mi. long from Friant, Cal., to the Crans Valley dam in Madera county. A branch line seven miles long from Pinedale, Cal., to Pinedale Junction is also planned.

**NASHVILLE, CHATTANOOGA & ST. LOUIS.**—This company plans the construction of a new two-story passenger station and office building at Paducah, Ky., to cost approximately \$250,000.

**NEW YORK, CHICAGO & ST. LOUIS.**—This company has awarded a contract to the Roberts & Schaefer Company, Chicago, for the construction of a 700-ton reinforced concrete coaling station with automatic elevating equipment, at Conneaut, Ohio.

**OKMULGEE NORTHERN.**—This company has made an application to the Interstate Commerce Commission to construct two extensions to its line, the first, designated as the Southwestern, to extend 15½ miles through Okmulgee and Okfuskee counties, Okla., and being stub at its southwestern terminus. The second extension, known as the Oktaha cut-off, will extend 26 miles through Okmulgee and Muskogee counties, connecting with the Missouri-Kansas-Texas lines at Oktaha, Okla.

**OREGON SHORT LINE.**—This company has awarded a contract to the Utah Construction Company, Salt Lake City, Utah, for the reduction of grade between Revre, Idaho, and Chalk, a distance of four miles.

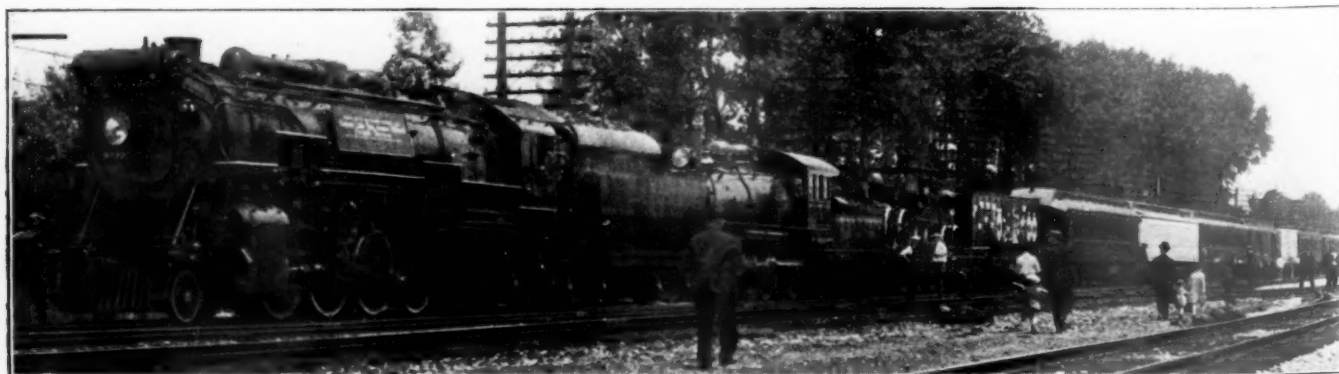
**OREGON SHORT LINE.**—This company has been authorized by the Interstate Commerce Commission to construct a line in Twinn Falls county, Idaho, and Elko county, Nevada.

**PENNSYLVANIA.**—This company is preparing plans for the elevation of its tracks at Lafayette street, Fort Wayne, Ind., at a cost of approximately \$2,500,000 and the necessary rearrangement of shops at a cost of \$1,500,000 is included in the project.

**SOUTHERN PACIFIC.**—This company plans the construction of a new power house at San Luis Obispo, Cal., to cost approximately \$50,000.

**TEXAS, PANHANDLE & GULF.**—This company has applied to the Interstate Commerce Commission for authority to construct a line 30 miles in length from Tucumcari, N. M., to Seymour, Texas, and in conjunction therewith to purchase, if possible, or lease from the Gulf, Texas & Western, a line 100 miles in length from Seymour to Salesville, Texas, and also to proceed with the construction of its own line from Perrin to Fort Worth, Texas, a distance of 57 miles. Permission to retain excess earnings was requested.

**UNION PACIFIC.**—This company plans the construction of a three mile cut-off for freight service near Long Beach, Cal.



The New York Central's "Service-Progress" Special



## Railway Financial News

**CAROLINA, CLINCHFIELD & OHIO.—Lease to L. & N.**—Formal application for control by lease of the Carolina, Clinchfield & Ohio was filed on July 21 by the Louisville & Nashville and the Atlantic Coast Line, which owns a majority of the L. & N. stock. No securities will be issued in connection with the proposed lease at the present time and the carriers' application insofar as it related to securities was confined entirely to the proposed assumption and payment of the obligations of the Clinchfield system. The proposed lease would extend for a period of 999 years, and its terms provide that the outstanding preferred stock and the 6 per cent cumulative income debentures of the Carolina, Clinchfield & Ohio now outstanding be returned to the treasury, leaving outstanding \$25,000,000 par of common stock. The lessees propose to assume payment of interest, taxes, and other fixed charges and to pay as rental for the property not more than \$12,000 per annum for maintenance of the corporate existence of the Clinchfield companies; and dividends upon the \$25,000,000 of common stock, payable quarterly, at the following rates: Beginning January 1, 1925, the first quarterly payment to mature April 1, 1925, for a period of 3 years, 3 per cent per annum; beginning January 1, 1928, for a period of 10 years, 4 per cent per annum; and beginning January 1, 1938, during the remainder of the term, 5 per cent per annum.

**CENTRAL OF NEW JERSEY.—Equipment Bonds Sold.**—The First National Bank, New York, and Drexel & Co., Philadelphia, have sold at prices to yield from 5.05 per cent to 5.20 per cent, according to maturity, \$3,750,000 5 per cent equipment bonds, series "J." The issuance of these bonds, dated March 15, 1923, has been approved by the Interstate Commerce Commission.

**CHICAGO & NORTH WESTERN.—Equipment Trust Issue Approved.**—This company has been authorized by the Interstate Commerce Commission to assume obligation and liability for \$4,755,000 of 7 per cent equipment trust certificates sold at 96½ to Kuhn, Loeb & Co., of New York, the proceeds to be applied to the acquisition of equipment.

**CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—Annual Report.**—This company's annual report for 1922 is reviewed in an article on another page of this issue entitled "Big Four 1922 Net Best With Single Exception." See also excerpts from annual report on adjacent pages.

**ELGIN, JOLIET & EASTERN.—Equipment Bond Issue Authorized.**—This company has been authorized to issue \$2,000,000 of equipment trust bonds in connection with acquiring equipment.

**EL PASO & SOUTHWESTERN.**—This company and its subsidiaries comprising the El Paso & Southwestern system have applied for authority to execute such financing as will permit the merger of the affiliated corporations into a single railroad corporation, under the laws of Arizona and New Mexico, for the purpose of eliminating the expense of separate corporate organizations, and also to simplify the financial organization of the system by exchanging the outstanding stocks and bonds of the subsidiaries into stocks and bonds of the merged corporation. The El Paso & Southwestern Railroad Company, which will operate the merged properties, has asked authority to increase its authorized capital stock from \$20,000,000 to \$35,000,000 and also to issue its stock share for share in exchange for stock of the subsidiary companies. The present capitalization of the companies to be merged was stated as follows: Stock, \$28,570,000 and bonds, \$14,922,000. The equipment owned by the subsidiaries will become the property of the merger company when the merger is accomplished. The El Paso & Southwestern company will not be merged, and in the completed reorganization, will take no part in the operation of the system. The \$4,000,000 of equipment of that company therefore would be transferred to the railroad company. The stock of the El Paso & Southwestern merged company will not be issued to the public but will remain in the holding company, the El Paso & Southwestern company. No sale of stocks or bonds or increase of bonded indebtedness is contemplated.

The applicants represented that the system has been operated

practically as a unit for more than 15 years and reference is made to the fact that in the general consolidation plan now under consideration of the commission the lines of the system fall into Group 17, comprising in general the Southern Pacific, The Chicago, Rock Island & Pacific and the El Paso & Southwestern. The latter system comprises 1,139 miles of road.

**FLORIDA EAST COAST.—Equipment Trusts Sold.**—The Bankers Trust Company, New York, have placed privately \$2,000,000 5 per cent equipment trust certificates, series "C," dated July 2, 1923, and due \$200,000 annually July 1, 1924, to July 1, 1933, both inclusive. The sale of these certificates at not less than 96.3 was approved by the Interstate Commerce Commission on July 11.

**GRAND TRUNK.—Claim of Shareholders Not Recognized.**—The reply of the Canadian government to representations made by the Grand Trunk shareholders committee on behalf of holders of Grand Trunk Pacific 4 per cent debenture stock was issued July 18. The reply recognizes the obligation of the Grand Trunk and the Grand Trunk Pacific to meet the debenture interest charges when there are sufficient earnings, but does not recognize that there is a claim against the Canadian government, there being no government guarantee.

The reply observes that the authorized issue of the Grand Trunk Pacific debentures was fifty millions, of which there is outstanding \$34,879,253, on which the annual interest amounts to \$1,395,170. The total amount paid to these debenture holders to March, 1919, was \$12,363,359, of which sum \$7,944,320 accrued to December 31, 1915, which date technically marked the completion of construction of the Grand Trunk Pacific. After 1915, interest on the debentures became an income liability, but at no time between January 1, 1916, up to the abandonment of the road by the Grand Trunk Pacific Company in March, 1919, nor since that period under the receivership, have the revenues of the Grand Trunk Pacific been sufficient to meet operating expenses, let alone interest. The reply continues: "The interest was paid by the Grand Trunk Pacific up to and including March, 1919, it is obvious that the payments were made with borrowed money, either that derived from capital or from loans."

The reply asks why the Grand Trunk, as guarantor, did not itself make these interest payments in view of the claim of the stockholders' committee as to the sufficiency of the pre-war net surplus to meet the obligation. It remarks that total advances by the government to the Grand Trunk Pacific to December 31, 1922, amounted to \$90,558,035.

"Contrast this with the position of the debenture stockholders. The government has advanced more than ninety millions, and has had no interest whatever—the debenture holders invest less than \$35,000,000, and have had interest aggregating \$12,362,359. It may also be expressed in this fashion. The Grand Trunk Pacific owes the government approximately \$21,000,000 in unpaid interest alone. The debenture stockholders have missed eight half-yearly interest payments, amounting in all to \$5,580,680."

The government reply is based on a report by G. A. Bell, deputy minister of railways; Gerard Ruel, vice-president and general counsel of the Canadian National Railways and G. W. Yates, assistant deputy minister of railways.

**GULF, MOBILE & NORTHERN.—Annual Report.**—The annual report for the year ended December 31, 1922, shows a surplus of \$744,340 as compared with \$44,588 in 1921. A selection of the principal items in the income account follows:

	1922	1921	Increase or Decrease
Average miles of road operated....	437	454	—17
Operating Revenues:			
Freight .....	\$3,930,742	\$3,407,105	\$523,636
Passenger .....	418,214	489,328	—71,114
Total operating revenues .....	4,541,439	4,086,217	455,218
Operating Expenses:			
Maintenance of way and structures .....	648,112	703,030	—54,918
Maintenance of equipment .....	758,720	789,877	—31,156
Traffic .....	169,014	156,823	12,191
Transportation .....	1,571,726	1,829,721	—257,995
General .....	183,001	178,526	4,476
Total operating expenses .....	3,320,393	3,653,018	—332,625
Net operating revenue .....	1,221,045	433,199	787,846
Railway tax accruals .....	299,309	234,057	65,251
Total net operating revenues .....	918,982	198,735	720,248
Net operating income .....	791,223	98,870	692,353
Total non-operating income .....	83,855	55,721	28,133
Gross income .....	875,078	154,592	720,487
Total deductions from income .....	130,738	110,004	20,735
Surplus .....	744,340	44,588	699,752

**HOCKING VALLEY.—Equipment Trusts Sold.**—J. P. Morgan & Co. and other bankers have sold at prices to yield 5.45 per cent \$4,020,000 5 per cent equipment trust certificates, dated April 1, 1923. The issuance of these certificates is subject to authorization of the Interstate Commerce Commission.

**KANSAS & MISSOURI RAILWAY & TERMINAL COMPANY.—Stock and Bond Issue Proposed.**—This company has applied to the Interstate Commerce Commission for authority to issue \$800,000 of 6 per cent first mortgage bonds, \$481,000 of preferred stock and \$962,000 of common stock, in addition to an issue of \$10,000

of stock to the incorporators. Of these securities \$379,000 of the bonds, and both the common and preferred stock will be issued and delivered in payment for the right of way and property which formerly was owned by the Kansas City Outer Belt & Electric Railroad, a belt line in Kansas City, Kansas. The proceeds of \$421,000 of the \$800,000 bond issue will be used to pay for rehabilitation of the line. No arrangements have been made yet regarding sale. The mortgage under which the bonds would be issued provides for a maximum issue of \$3,000,000. The bonds will be dated July 1, 1923, maturing January 1, 1953. The applicant has also asked authority to complete construction of the line.

**KANSAS CITY & GRAND VIEW.—Asks Authority to Incorporate.**—This company has applied to the Interstate Commerce Commission for authority to issue \$14,000 of common capital stock of which 5 per cent has been paid in for the purpose of incorporating under the Missouri law, and also to construct a line 13½ miles in length from the former town of Leeds, now included within Kansas City, to Grand View, connecting with the Kansas City Southern Railway at both ends. The applicant proposes eventually to increase capitalization to \$2,500,000.

**KANSAS CITY SOUTHERN.—Proposes Acquisition.**—This company has applied for authority to acquire joint control of the Kansas & Missouri Railway & Terminal Company by purchase of one-half the capital stock and bonds, the Kansas City, Kaw Valley & Western Railway holding the other half. The terminal company bought the property, a Kansas City belt line, from Emii Metschen, of Kansas City, who previously had purchased it at a foreclosure sale, the Kansas City Outer Belt & Electric Railroad, the first owner, having been forced into receivership with the Kansas City, Mexico & Orient Railroad. The Kaw Valley, an interurban electric line, has arranged to purchase from Metschen \$379,000 of the terminal company's first mortgage bonds, \$481,000 of its preferred stock and \$962,000 of its common stock, which he received from the terminal company in payment for the property. The Kansas City Southern now has arranged, subject to the commission's authorization to purchase for \$194,318 cash one-half of these securities. The applicant also has agreed to pay one-half of any operating deficits and also to purchase one-half of the bonds which may be issued in order to secure funds to rehabilitate and complete construction of the line, if such bonds cannot be marketed on satisfactory terms.

**LOUISVILLE & NASHVILLE.—Lease of C. C. & O.**—See Carolina, Clinchfield & Ohio.

**MICHIGAN CENTRAL.—Annual Report.**—This company's annual report for 1922 is reviewed in an article on another page of this issue entitled "Michigan Central Earns \$12,818,271 After Charges." See also excerpts from annual report on adjacent pages.

**NEW ORLEANS, TEXAS & MEXICO.—Proposed Acquisition of Dayton-Goose Creek Disapproved.**—This company's application for approval of the proposed acquisition of the Dayton-Goose Creek again has been denied, the Commission affirming its original decision that the price of \$925,000 to be paid for the stock of the Dayton-Goose Creek was not shown to be reasonable inasmuch as it exceeds by about \$400,000 the investment in road and equipment.

**NEW YORK, ONTARIO & WESTERN.—Oswego Purchase Approved.**—This company has been authorized by the Interstate Commerce Commission to assume obligation and liability for the payment of \$185,000 in part purchase of lake terminal property at Oswego, N. Y.

**NORTHERN MARYLAND & TIDEWATER.—Acquisition Sought.**—William A. Morgart on behalf of the Castleman Valley Railroad has sought authority to acquire and operate the Northern Maryland & Tidewater, a line 14 miles in length, extending from Worth, Somerset county, Pa., into Garrett county, Md. The applicant's purpose is to provide transportation facilities in an extensive coal field. Permission to retain excess earnings is desired.

**OSWEGO & SYRACUSE.—Bonds.**—The stockholders on July 10 approved an issue of \$2,000,000 bonds to reimburse the Delaware, Lackawanna & Western for \$688,000 bonds which matured in 1923, \$438,000 bonds which matured in 1907 and a note for \$87,000, and to provide a reserve out of which future improvements will be paid for.

**PITTSBURGH & LAKE ERIE.—Annual Report.**—The annual report for the year ended December 31, 1922, issued this week, shows a net income before dividends of \$4,332,011 as compared with \$2,384,961 in 1921. A selection of the principal items in the income account follows:

	1922	1921	Increase or Decrease
Operating Revenues:			
Freight .....	\$25,618,907	\$18,746,699	\$6,872,208
Passenger .....	2,815,647	2,974,304	—158,657
Total operating revenues .....	29,570,983	23,226,059	6,344,924
Operating Expenses:			
Maintenance of way and structures .....	3,341,517	2,826,413	515,104
Maintenance of equipment .....	10,933,565	7,311,236	3,622,329
Traffic .....	256,909	241,597	15,312
Transportation .....	9,781,745	9,103,749	677,996
General .....	742,227	830,905	—88,688
Total operating expenses .....	25,080,013	20,340,436	4,739,577
Net revenues from railway operations .....	4,490,970	2,885,623	1,605,346
Railway tax accruals .....	1,096,446	1,201,858	—105,412
Railway operating income .....	3,392,865	1,682,355	1,710,510
Net railway operating income .....	3,279,742	4,066,871	1,212,871
Gross income .....	6,018,304	4,023,274	1,995,030
Total deductions from gross income .....	1,686,293	1,638,312	47,980
Net income .....	4,332,011	2,384,961	1,947,049
Dividends declared, 10 per cent each year (in 1921, 6.62 per cent charged to income, and 3.38 per cent to profit and loss) .....	3,598,560	2,384,961	1,213,599
Surplus for the year .....	733,451	.....	733,451

**PONCA CITY OIL FIELD.—Proposes Common Stock Issue.**—This company has applied to the Interstate Commerce Commission for authority to issue and sell \$600,000 of common capital stock at \$100 par. The proceeds will be applied to the construction and equipping of a line 27 miles in length from a connection with the Atchison, Topeka & Santa Fe at Ponca City, to a connection with the Chicago, Rock Island & Pacific Ry. at Billings, Okla., with a branch line to Tonkawa about 2½ miles in length. The estimated cost of construction is \$540,000. The stock will be sold at par to E. W. Marland.

**WABASH.—Equipment Trust Certificates Sold.**—This company has applied for authority to assume liability for \$2,010,000 of 5½ per cent equipment trust certificates, to be issued by the Bank of North America & Trust Company, of Philadelphia, and dated July 1, 1923, maturing in 15 annual installments of \$134,000 from 1924 to 1938. All the certificates have been sold, subject to the Commission's approval, to Kuhn, Loeb & Co., of New York City, at 97.02 per cent of par. The proceeds will be applied to the purchase of equipment estimated to cost \$2,695,500, including 30 heavy mikado type locomotives and 20 eight-wheel switching locomotives.

#### Trend of Railway Stock and Bond Prices

	July 24	Last Week	Last Year
Average price of 20 representative railway stocks .....	60.88	61.32	67.23
Average price of 20 representative railway bonds .....	82.63	82.41	87.82

DAMAGE estimated at over \$1,000,000 has been sustained by the railroads of northwestern Wyoming during the past week by extensive floods. Train service on the line of the Chicago, Burlington & Quincy between Casper, Wyo., and Billings, Mont., 329 miles, is at a standstill with large sections of track washed out at both ends of the line. The extent of the damage has not been reported, failure of wire communication having made it impossible to form any estimate. The town of Bonneville, N. Y., was inundated to a depth of 2 ft. to 5 ft., and Thermopolis suffered in the same way. It seems likely that the Burlington line may be closed for weeks.

BLACKPOOL, ENGLAND, a seashore resort about 30 miles north of Liverpool, was the scene on Friday, June 1, of a picnic of about 4,000 people, employees of a single firm, Bryant & May, all of whom were conveyed there by special trains, nine of them, over the London, Midland & Scottish Railway. These were all "corridor" trains and they started from Liverpool, Glasgow, Leeds, Garsbin and London. About 1,500 of these excursionists started from London, making a journey of over 200 miles, and arriving at the shore about noon. These made the return journey between 11 p. m. and 6 a. m. Among the injunctions on the circulars was one to "try to sleep on the trains and allow others to do so."



# Annual Reports

## Michigan Central Railroad Company—Seventy-seventh Annual Report

To the Stockholders of

THE MICHIGAN CENTRAL RAILROAD COMPANY:

The Board of Directors herewith submits its report for the year ended December 31, 1922, with statements showing the income account for the year and the financial condition of the company.

### Road operated

The following is a comparative table of the mileage operated:

	1922 Miles	1921 Miles	Increase Miles
Main line and branches owned.....	1,184.69	1,184.69	..
Line jointly owned .....	.70	.70	..
Leased lines .....	577.71	577.67	.04
Lines operated under trackage rights.....	98.96	98.96	..
Total road operated.....	1,862.06	1,862.02	.04

The increase in the mileage is the result of corrections in measurements.

### General conditions

A general revival of business in the early part of the year continued in some industries throughout the year, but the coal strike and later the shopmen's strike caused a serious setback in the return of normal conditions affecting the railroads. Notwithstanding these unfavorable factors, an increased freight tonnage was handled by the company as compared with 1921.

### SUMMARY OF FINANCIAL OPERATIONS AFFECTING INCOME

	Year ended Dec. 31, 1922	Year ended Dec. 31, 1921	Increase or Decrease
<b>OPERATING INCOME</b>	1,862.06	1,862.02	..
<b>RAILWAY OPERATIONS</b>	<i>miles operated</i>	<i>miles operated</i>	<i>.04 mile</i>
Railway operating revenues.....	\$83,426,407.27	\$72,911,852.36	\$10,514,554.91
Railway operating expenses.....	59,576,357.37	52,551,944.57	7,024,412.80
<b>NET REVENUE FROM RAILWAY OPERATIONS</b>	\$23,850,049.90	\$20,359,907.79	\$3,490,142.11
<b>Percentage of expenses to revenues</b>	(71.41)	(72.08)	—(.67)
Railway tax accruals .....	\$4,571,702.45	\$4,681,296.47	—\$109,594.02
Uncollectible railway revenues .....	13,497.68	52,834.07	—39,336.39
<b>RAILWAY OPERATING INCOME</b>	\$19,264,849.77	\$15,625,777.25	\$3,639,072.52
Equipment rates, net debit..	\$716,353.02	\$235,302.55*	\$951,655.57
Joint facility rents, net debit .....	482,387.46	457,809.28	24,578.18
<b>NET RAILWAY OPERATING INCOME</b>	\$18,066,109.29	\$15,403,270.52	\$2,662,838.77
<b>MISCELLANEOUS OPERATIONS</b>			
Revenues .....	\$320,795.60	\$48,187.23	\$272,608.37
Expenses and taxes.....	179,713.48	27,921.29	151,792.19
<b>MISCELLANEOUS OPERATING INCOME</b>	\$141,082.12	\$20,265.94	\$120,816.18
<b>TOTAL OPERATING INCOME</b>	\$18,207,191.41	\$15,423,536.46	\$2,783,654.95
<b>NON-OPERATING INCOME</b>			
Additional compensation and adjustment of standard return under contract with Director General of Railroads for use of the company's railroad property during federal control .....		\$621,873.80	—\$621,873.80
Miscellaneous rent income.....	\$360,962.81	178,304.44	182,658.37
Miscellaneous non-operating physical property .....	4,515.29	8,314.20	—3,798.91
Dividend income .....	498,877.00	440,679.47	58,197.53
Income from funded securities and accounts .....	110,566.14	71,310.86	39,255.28
Income from unfunded securities and accounts .....	279,964.49	472,724.77	—192,760.28
Miscellaneous income .....	102,609.45†	1,441,616.95†	1,339,007.50
<b>TOTAL NON-OPERATING INCOME</b>	\$1,152,276.28	\$351,590.59	\$800,685.69
<b>GROSS INCOME</b>	\$19,359,467.69	\$15,775,127.05	\$3,584,340.64
<b>DEDUCTIONS FROM GROSS INCOME</b>			
Rent for leased roads.....	\$2,736,021.30	\$2,793,425.71	—\$57,404.41
Miscellaneous rents.....	2,700.17	4,493.94	—1,793.77
Miscellaneous tax accruals.....	14,015.09	12,756.68	\$1,258.41
Separately operated properties—loss .....		896.35	—896.35
Interest on funded debt.....	3,320,967.40	3,396,968.64	—76,001.24
Interest on unfunded debt.....	408,136.11	1,849,322.88	—1,441,186.77
Amortization of discount on funded debt .....	104,753.99	68,360.99	36,393.00
Maintenance of investment organization .....	1,633.34	273.51	1,359.83
Miscellaneous income charges..	47,030.57*	76,708.27*	29,677.70
<b>TOTAL DEDUCTIONS FROM GROSS INCOME</b>	\$6,541,196.83	\$8,049,790.43	—\$1,508,593.60
<b>NET INCOME</b>	\$12,818,270.86	\$7,725,336.62	\$5,092,934.24
<b>DISPOSITION OF NET INCOME</b>			
Dividends declared (14 per cent 1922, 6 per cent 1921).....	\$2,623,096.00	\$1,124,184.00	\$1,498,912.00
<b>SURPLUS FOR THE YEAR CARRIED TO PROFIT AND LOSS.....</b>	<b>\$10,195,174.86</b>	<b>\$6,601,152.62</b>	<b>\$3,594,022.24</b>

\*Credit balance. †Debit balance.

### Revenues, tonnage and Passengers

The total operating revenues were \$83,426,407.27, an increase of \$10,514,554.91.

Freight revenue was \$55,721,157.95, an increase of \$9,993,022.96, notwithstanding the adverse conditions affecting tonnage and the rate reduction of July 1st elsewhere referred to in this report. Total revenue tonnage increased 4,790,563 tons. There was a decrease of 744,351 tons of anthracite coal, caused by the coal strike, but despite the suspension of bituminous coal traffic from certain mines during this strike, there was an increase in bituminous coal of 1,343,471 tons.

The revenue from passengers was \$19,247,622.17, a decrease of \$768,764.89. There were 24,482 more interline passengers carried than in 1921, but there was a decrease of 589,627 in local and commutation passengers. The amount of passenger traffic was somewhat affected by the coal and shopmen's strikes.

Express revenue was \$4,292,291.83, an increase of \$1,521,180.34. The express revenues of the company are based on a proportion of the net income of the American Railway Express Company. The increase over 1921 is largely attributable to the adjustment of overaccruals of certain reserves by the express company and to the operating economies instituted by it.

### Operating Expenses

The following table shows the operating expenses by groups for 1922, compared with those for 1921, the latter having been adjusted for the purpose of this comparison for the reasons set forth in the report for that year:

Group	Amount	Increase
Maintenance of way and structures.....	\$9,007,593.64	\$321,102.62
Maintenance of equipment.....	18,043,227.98	3,657,974.56
Traffic .....	1,098,623.04	26,957.88*
Transportation .....	28,909,506.64	624,476.56*
Miscellaneous .....	869,250.65	95,780.07*
General .....	1,679,988.21	98,973.99*
Transportation for investment—credit...	31,832.79	22,562.16
<b>Total operating expenses.....</b>	<b>\$59,576,357.37</b>	<b>\$3,155,450.84</b>

\*Decrease.

### Operating Expenses

The increase of \$3,657,974.56 for maintenance of equipment is due to extraordinary freight car repairs by which bad order cars were reduced approximately 50 per cent during the year; to extensive work on passenger equipment necessitated by the postponement of repairs in previous years for various causes; to increased locomotive repairs due to work deferred in 1921 on account of depression, when shops were closed for a protracted period, and to increase costs incident to the shopmen's strike.

Although a greater volume of traffic was handled in 1922, there was a decrease in nearly all of the items of expense in the transportation group, reflecting economy and efficiency in operation. An advance in the price of coal resulting from the coal miners' strike caused a substantial increase in the outlay for fuel. There was one particularly noteworthy item of decrease in this group, \$1,243,912.45, in loss and damage to freight, a reduction of approximately 60 per cent.

Reduction in wages of clerical forces and in valuation expenses are the principal items contributing to the decrease in general expenses.

### Reductions in Freight Rates

Under decision of the Interstate Commerce Commission, dated May 16, 1922, a 10 per cent reduction in freight rates became effective on July 1st. It is estimated that the effect of this order, on the basis of the freight traffic handled in the last half of 1922, was to reduce revenue by approximately \$2,339,000.

### Industrial Development

During the year there were located upon the company's lines nineteen new industries, which will produce additional traffic estimated at 6,000 carloads per year. Fifty-one industries already located on the company's lines increased their facilities, the estimated result of which will be an increase of about 14,800 carloads annually.

### New Arch Bridge Over Niagara River at Niagara Falls

The Niagara River Bridge Company, the entire capital stock of which is owned by The Canada Southern Railway Company, is the owner of a cantilever bridge over the Niagara River at Niagara Falls, which this company operates under lease from the Canada Southern Railway Company. The bridge is thirty-nine years old and rapidly becoming obsolete. It has been decided to replace it with a double-track three-hinged steel arch bridge, with a clear span of 640 feet and a deck girder approach span of 100 feet at each end, to be erected just north of the existing bridge. The estimated cost of the project (exclusive of the easterly track approach, the design for which has not yet been determined) is \$1,797,500. This amount is divided into net capital charges of \$888,500 (\$1,034,500 chargeable to the capital account of the Niagara River Bridge Company, and \$146,000 to be credited to the capital account of The Canada Southern Railway Company) and a charge to this company's operating expenses of \$909,000. The last mentioned charge will be reduced by the value of salvage recovered (estimated at \$50,000) and may be further reduced through trackage contract with the Pere Marquette Railway Company. The location of the new bridge has been approved by United States and Canadian authorities, and substantial progress has been made in the preliminary work.

### Yards at Niles, Michigan

The construction of the east-bound receiving yard at Niles was completed during the year, and twelve tracks of the east-bound classification yard were constructed, in addition to which a substantial amount of grading was done upon this yard. Both yards were put into operation before the close of the year, and, upon the completion of the classification yard in 1923, modern facilities for handling business through this terminal will be provided.

### Property Investment Accounts

Increases in the property investment accounts for the year, as shown in detail elsewhere in this report, were as follows:

Road .....	\$2,000,890.78
Equipment .....	2,572,599.90
Improvements on leased property.....	109,453.33
Miscellaneous physical property.....	64,392.31
<b>Total.....</b>	<b>\$4,747,336.32</b>

## Changes in Funded Debt

## ISSUE OF EQUIPMENT TRUST CERTIFICATES

Under the New York Central Lines Equipment Trust of 1922, there were issued \$27,645,000 of certificates, of which this company's share is \$5,595,000.

## RETIREMENT OF NOTES

The company paid during the year its 6 per cent notes, dated December 23, 1920, which had been given to The New York Central Railroad Company in order to provide for equipment and additions and betterments, as described in the report for 1920, as follows:

Serial notes for \$262,000 each, due December 23, 1922-1935... \$3,668,000  
Ten-year note, due December 23, 1930... 613,000

Five hundred and seven thousand dollars of the company's 6 per cent refunding and improvement mortgage bonds, series B, which were pledged as collateral security for the ten-year note, were returned to the company's treasury.

The changes in the funded debt of the company, in detail, were as follows:

The funded debt outstanding on December 31, 1921, was.... \$69,530,924.97

It has been increased as follows:

N. Y. C. Lines Equipment Trust 5 per cent certificates of June 1, 1922 ..... 5,595,000.00  
\$75,125,924.97

—and has been reduced as follows:

Serial notes to the N. Y. C. R. R. Co. dated December 23, 1920, due December 23, 1922 to 1935 ..... \$3,668,000.00

Ten-year note to the N. Y. C. R. R. Co. dated December 23, 1920, due December 23, 1930. 613,000.00

Payments falling due during the year and on January 1, 1923, on the company's liability for principal installments under equipment trust agreements as follows:

N. Y. C. Lines Trust of 1907, final installment due November 1, 1922..... 260,425.43  
N. Y. C. Lines Trust of 1910, installment due January 1, 1923..... 393,960.44  
N. Y. C. Lines Trust of 1912, installment due January 1, 1923..... 151,710.90  
N. Y. C. Lines Trust of 1913, installment due January 1, 1923..... 262,359.54  
M. C. R. R. Trust of 1915, installment due October 1, 1922..... 300,000.00  
M. C. R. R. Trust of 1917, installment due March 1, 1922..... 600,000.00  
Equipment Trust No. 48 (1920), installment due January 15, 1922..... 346,400.00  
M. C. R. R. Co. proportion of N. Y. C. R. R. Co. Trust of 1920, installment due April 15, 1922 ..... 467,664.75  
7,063,521.06

leaving the funded debt on December 31, 1922..... \$68,062,403.91

[Advertisement]

## Termination of New York Central Lines Equipment Trust of 1907

The New York Central Lines equipment trust of 1907 having expired on November 1, 1922, the title to the equipment was transferred by the Trustee to the several railroad companies, parties to the trust, in proportion to the amount of the cost thereof paid by each company, respectively. This company's share of the equipment so transferred from trust to railroad-owned consisted of 11 locomotives, 17 passenger-train cars, 3,349 freight-train cars and 198 work-train cars.

## New York Central Lines Equipment Trust of 1922

This trust was created by agreement dated June 1, 1922, to which The New York Central Railroad Company, The Michigan Central Railroad Company, The Cleveland, Cincinnati, Chicago and St. Louis Railway Company, The Cincinnati Northern Railroad Company, The Pittsburgh and Lake Erie Railroad Company, and The Pittsburgh McKeesport and Youghioheny Railroad Companies are parties. Under the trust \$27,645,000 of 5 per cent equipment trust certificates maturing in equal annual installments of \$1,843,000 over a period of fifteen years, were issued, representing approximately 75 per cent of the cost of the equipment which was leased by the Trustee to the railroad companies. The equipment allotted to this company under the trust consists of 3,500 freight cars and 10 switching locomotives, costing \$7,471,955. The certificates are prorated among the railroad companies in proportion to the cost of the equipment allotted to each, this company's share being \$5,595,000.

## New York Central Lines Four and One-half per cent Equipment Trust of 1922

This trust was created by agreement dated September 1, 1922, to which The New York Central Railroad Company, The Michigan Central Railroad Company, and The Cleveland, Cincinnati, Chicago and St. Louis Railway Company are parties. Under the trust \$12,660,000 of 4½ per cent equipment trust certificates maturing in equal annual installments of \$844,000 over a period of fifteen years are issuable, representing approximately 75 per cent of the cost of the equipment leased by the Trustee to the railroad companies. The equipment allotted to this company under the trust consists of 15 locomotives, estimated to cost \$1,026,000. No certificates were issued during the year. When issued they are to be prorated among the railroad companies in proportion to the cost of the equipment allotted to each.

## Changes in Organization

The Board records, with deep regret, the death during the year of the following:

Abraham T. Hardin, Director and Vice-President, February 21;  
John Carstensen, Vice-President, April 14;  
William Rockefeller, Director and member of Finance Committee, June 24.  
The Board records the election or appointment of the following:  
Warren S. Hayden, Director, May 4, to fill the vacancy caused by the death of Mr. Hardin;  
John L. Burdett, Vice-President, June 14;  
John G. Walber, Vice-President, Personnel, November 1;  
Alfred H. Smith, member of Finance Committee, December 13, to fill the vacancy caused by the death of Mr. Rockefeller.  
Appreciative acknowledgment is made to officers and employees of their loyal and efficient co-operation and service.

For the Board of Directors,

ALFRED H. SMITH,  
President.

## Cleveland, Cincinnati, Chicago &amp; St. Louis.—Thirty-fourth Annual Report

## To the Stockholders of

THE CLEVELAND, CINCINNATI, CHICAGO AND ST. LOUIS RAILWAY COMPANY:  
The Board of Directors herewith submits its report for the year ended December 31, 1922, with statements showing the income account and the financial condition of the company.

## Road operated

The mileage covered by this report is as follows:

	1922 Miles	1921 Miles	Increase Miles	Decrease Miles
Main lines and branches owned.....	1,685.45	1,691.78	..	6.33
Leased lines.....	205.06	205.10	..	.04
Lines operated under contract.....	326.84	326.68	.16	..
Lines operated under trackage rights	192.08	187.31	4.77	..
Total road operated.....	2,409.43	2,410.87	..	1.44

## General Conditions

A general revival of business in the early part of the year continued in some industries throughout the year, but the coal strike and later the shopmen's strike caused a serious setback in the return of normal conditions affecting the railroads. Notwithstanding these unfavorable factors, an increased freight tonnage was handled by the company as compared with 1921.

## Reductions in freight rates

Under decision of the Interstate Commerce Commission, dated May 16, 1922, a ten per cent reduction in freight rates became effective on July 1st. It is estimated that the effect of this order, on the basis of the freight traffic handled in the last half of 1922, was to reduce revenue by approximately \$2,500,000.

## Industrial development

During the year there were located upon the company's lines 171 new industries, which will produce additional traffic estimated at 53,800 carloads per year. Twelve industries already located on the company's lines increased their facilities, the estimated result of which will be an increase of about 9,400 carloads annually.

## SUMMARY OF FINANCIAL OPERATIONS AFFECTING INCOME

	Year ended Dec. 31, 1922	Year ended Dec. 31, 1921	Increase or Decrease
OPERATING INCOME	2,409.43	2,410.87	Decrease
RAILWAY OPERATIONS	miles operated	miles operated	—1.44 miles
Railway operating revenues.....	\$84,665,690.16	\$79,793,593.13	\$4,872,097.03
Railway operating expenses.....	64,858,313.54	64,406,122.34	452,191.20
NET REVENUE FROM RAILWAY OPERATIONS	\$19,807,376.62	\$15,387,470.79	\$4,419,905.83

	Percentage of expenses to revenues	(76.61)	(80.72)	—(4.11)
Railway tax accruals.....	\$4,226,814.61	\$3,982,289.42	\$244,525.19	
Uncollectible railway revenues...	10,962.28	6,475.11	\$4,487.87	

RAILWAY OPERATING INCOME.....\$15,569,599.03 \$11,398,706.26 \$4,170,892.77

Equipment rents, net debit.... \$1,230,728.94 \$723,356.65 \$507,372.29  
Joint facility rents, net debit.. 591,641.10 575,057.31 16,583.79

NET RAILWAY OPERATING INCOME.....\$13,747,228.99 \$10,100,292.30 \$3,646,936.69

MISCELLANEOUS OPERATIONS  
Revenues..... \$27,954.57 \$29,703.42 —\$1,748.85  
Expenses and taxes..... 19,703.33 25,837.73 —6,134.42

MISCELLANEOUS OPERATING INCOME.....\$8,251.24 \$3,865.67 \$4,385.57

TOTAL OPERATING INCOME.....\$13,755,480.23 \$10,104,157.97 \$3,651,322.26

## NON-OPERATING INCOME

Additional compensation under contract with Director General of Railroads for use of the company's railroad property during federal control..... \$321,843.23 \$117,693.70 \$204,149.53  
Miscellaneous rent income..... 223,894.06 366,818.69 —142,924.63  
Miscellaneous non-operating physical property..... 194,042.24 188,411.82 5,630.42  
Dividend income..... 74,105.89 112,853.90 —38,748.01  
Income from funded securities.. 447,176.09 346,311.62 100,864.47  
Income from unfunded securities and accounts..... 397,031.92 325,676.98 71,354.94  
Release of premiums on funded Debt..... 1,165.44 1,322.75 —157.31  
Miscellaneous income..... 26,328.89\* 53,130.79\* 26,801.90

TOTAL NON-OPERATING INCOME.....\$1,632,929.98 \$1,405,958.67 \$226,971.31

GROSS INCOME.....\$15,388,410.21 \$11,510,116.64 \$3,878,293.57

## DEDUCTIONS FROM GROSS INCOME

Rent for leased roads..... \$110,990.00 \$465,283.70 —\$354,293.70  
Miscellaneous rents..... 271,663.81 434,182.13 —162,518.32  
Miscellaneous tax accruals..... 15,207.74 14,400.00 807.74  
Separately operated properties—loss 65,310.55 236,759.48 —171,448.93  
Interest on funded debt..... 6,400,594.87 6,421,907.20 —21,312.33  
Interest on unfunded debt..... 807,864.92 1,119,890.21 —312,025.29  
Amortization of discount on debt..... 158,982.17 146,038.92 12,943.25  
Maintenance of investment organization..... 51.17 328.17 —277.00  
Miscellaneous income charges..... 28,908.43 258,621.67† 287,530.10



TOTAL DEDUCTIONS FROM GROSS INCOME			
Net income	\$7,859,573.66	\$8,580,168.14	—\$720,594.48
DISPOSITION OF NET INCOME	7,528,836.55	2,929,948.50	4,598,888.05
Dividends declared			
On preferred stock 5 per cent each year	\$499,925.00	\$499,925.00	.....
On common stock 5 per cent (4 per cent for 1922 and 1 per cent declared in December, 1922, payable January 20, 1923)	2,351,435.00	.....	\$2,351,435.00
Sinking funds	39,175.10	37,216.79	1,958.31
Investment in physical property	55,898.62	66,189.93	—10,291.31
TOTAL APPROPRIATIONS OF INCOME	\$2,946,433.72	\$603,331.72	\$2,343,102.00
SURPLUS FOR THE YEAR CARRIED TO PROFIT AND LOSS	\$4,582,402.83	\$2,326,616.78	\$2,255,786.05
*Debit. †Credit.			

## Operating expenses

The following table shows the operating expenses by groups for 1922 compared with those for 1921, the latter having been adjusted for the purposes of this comparison for the reasons set forth in the report for that year:

Group	Amount	Decrease
Maintenance of way and structures	\$9,452,236.31	\$1,710,981.73
Maintenance of equipment	18,729,184.09	215,196.18*
Traffic expenses	1,333,076.59	56,925.31*
Transportation expenses	32,673,885.26	331,185.27
Miscellaneous operations	673,562.80	12,524.71
General	2,061,912.54	67,894.38
Transportation for investment—credit	65,544.05	24,199.61
Total operating expenses	\$64,858,313.54	\$1,738,875.45
*Increase.		

## Operating expenses

The decrease of \$1,710,981.73 in maintenance of way and structures was principally caused by reduction in wages and force and in prices of certain materials and a decrease in the application of rails, ties and ballast.

Notwithstanding a substantial reduction in the outlay for freight car repairs, the result of unusually heavy charges to this account in 1921, maintenance of equipment showed an increase of \$215,196.18, attributable mainly to expenses incident to the shopmen's strike.

The greater part of the increase in traffic expenses of \$56,925.31 is due to reissuance during 1922 of tariffs to cover rate reductions ordered by the Interstate Commerce Commission.

Transportation expenses decreased \$331,185.27 as the result of increased efficiency in operation notwithstanding the increased cost of fuel.

## Property investment accounts

Increases in the property investment accounts for the year, as shown in detail elsewhere in this report, were as follows:

Road	\$1,728,137.87
Equipment	6,564,836.73
Miscellaneous physical property	180,871.12
Improvements on leased property	1,411,244.33
Total	\$9,885,090.05

## Changes in funded debt

The changes in the funded debt of the company, in detail, were as follows: The amount on December 31, 1921

N Y C Lines Equipment Trust 5 per cent certificates of June 1, 1922	5,625,000.00
	\$138,181,552.72

and has been reduced as follows:  
Payment of notes:

Promissory notes of the company, dated December 23, 1920, given to The New York Central Railroad Company:	
Ten-year note due December 23, 1930	\$113,000.00
On account of note for \$4,560,000 due December 23, 1930	738,000.00
Five serial notes due December 23, 1922 to 1926, inclusive	1,314,666.69
Partial payment on serial note due December 23, 1927	188,399.97

Bonds retired or purchased for sinking fund during the year:

C I St L & C Ry Co general first mortgage bonds retired and cancelled	13,000.00
C I St L & C Ry Co general first mortgage bonds retired through sinking fund	70,000.00
C C & St L Ry Co (St Louis Division) first collateral trust mortgage bonds purchased for sinking fund	48,000.00
Central Grain Elevator Company bonds retired	58,000.00

Payments falling due during the year and on January 1, 1923, on the company's liability for principal installments under equipment trust agreements were made as follows:

N Y C Lines Trust of 1907, final installment due November, 1922	246,689.82
N Y C Lines Trust of 1910, installment due January, 1923	199,625.82
N Y C Lines Trust of 1912, installment due January, 1923	159,890.20
N Y C Lines Trust of 1913, installment due January, 1923	116,733.71
Big Four Railway Trust of 1914, installment due June, 1922	373,000.00
Big Four Railway Trust of 1915, installment due July, 1922	115,000.00
Big Four Railway Trust of 1917, installment due June, 1922	237,000.00
Equipment Trust No. 44 (1920), installment due January, 1922	346,700.00
N Y C R R Co Trust of 1920, installment due April 15, 1922	761,111.40
leaving the funded debt on December 31, 1922	\$133,082,735.11

[ADVERTISEMENT]

## Termination of New York Central Lines equipment trust of 1907

The New York Central Lines equipment trust of 1907 having expired on November 1, 1922, the title to the equipment was transferred by the Trustee to the several railroad companies, parties to the trust, in proportion to their respective allotments. This company's share of the equipment so transferred from trust to railroad owned consisted of 114 locomotives, 18 passenger-train cars, 1,520 freight-train cars and 94 work-train cars.

## New York Central Lines equipment trust of 1922

This trust was created by agreement dated June 1, 1922, to which The New York Central Railroad Company, The Michigan Central Railroad Company, The Cleveland Cincinnati Chicago and St Louis Railway Company, The Cincinnati Northern Railroad Company, The Pittsburgh and Lake Erie Railroad Company, and The Pittsburgh MeKeesport and Youghioheny Railroad Company are parties. Under the trust \$27,645,000 of 5 per cent equipment trust certificates maturing in equal annual installments of \$1,843,000 over a period of fifteen years were issued, representing approximately 75 per cent of the cost of the equipment which was leased by the Trustee to the railroad companies. The equipment allotted to this company under the trust consists of four thousand freight cars and fifteen switching locomotives, costing \$7,523,260. The certificates are prorated among the railroad companies in proportion to the cost of the equipment allotted to each, this company's share being \$5,625,000.

## New York Central Lines four and one-half per cent equipment trust of 1922

This trust was created by agreement dated September 1, 1922, to which The New York Central Railroad Company, The Michigan Central Railroad Company, and The Cleveland Cincinnati Chicago and St Louis Railway Company are parties. Under the trust \$12,660,000 of 4½ per cent equipment trust certificates maturing in equal annual installments of \$844,000 over a period of fifteen years are issuable, representing approximately 75 per cent of the cost of the equipment leased by the Trustee to the railroad companies. The equipment allotted to this company under the trust consists of sixty-five locomotives estimated to cost \$4,504,250. No certificates were issued during the year. When issued they are to be prorated among the railroad companies in proportion to the cost of the equipment allotted to each.

## Acquisition of stock and guaranty of bonds of The Cleveland Union Terminals Company

The company purchased during the year 19 shares of the capital stock of The Cleveland Union Terminals Company (par value \$100). The remainder of the stock of the Terminals Company is held, 68 shares by The New York Central Railroad Company, 4 shares by The New York Chicago and St Louis Railroad Company, and 9 shares by directors of The Cleveland Union Terminals Company, each of the railroad companies having an option upon three of such directors' shares. The proprietor companies have entered into an agreement with The Cleveland Union Terminals Company to join in a joint and several guaranty of its first mortgage sinking-fund bonds, principal and interest, of which not exceeding \$60,000,000 are issuable. The first series of such bonds, series A, consisting of \$12,000,000 of fifty-year five and one-half per cent bonds, were issued, guaranteed and sold to the public during 1922.

## Acquisition of stock of The Cincinnati Northern Railroad Company

During the year the company acquired 11,515 shares, par value \$1,151,500, of the capital stock of The Cincinnati Northern Railroad Company, making the total shares in that company now owned by this company 29,289, or 97.32 per cent of the total shares outstanding.

## Acquisition of European Loan bonds

With additional purchases in 1922, the company's holdings of European Loan bonds at the end of the year amounted to 36,122,000 francs, equivalent at the normal rate of exchange (5.1813 francs to the dollar) to \$6,971,609.44. The total cost of these bonds was \$3,397,748.12.

## Evansville Indianapolis and Terre Haute Railway Company

The Evansville Indianapolis and Terre Haute Railway Company expended \$825,848.58 in 1921 and 1922 for the reconstruction of its road and additions and betterments thereto. Of this expenditure \$400,000 was provided by a loan from the United States and the remainder through advances by this company. The Evansville Company was indebted to this company at the close of the year to the extent of \$1,490,866.75, for advances and unpaid traffic balances and interest on these accounts.

## Central Indiana Railway

This company and The Pennsylvania Company own, in equal proportions, the capital stock of the Central Indiana Railway Company and this company is the guarantor of \$750,000 of that company's 4 per cent mortgage bonds which were sold in 1904 at 90½ per cent of par, the Pennsylvania Company being the owner of the remaining \$750,000 of such bonds.

The operation of the Central Indiana has for years resulted in large deficits which have been made good by the proprietor companies. No interest has ever been paid by that company upon its mortgage bonds and this company has since 1904 been paying the interest upon the bonds guaranteed by it. The value of the Central Indiana to its proprietor companies has not been in any way commensurate with the financial burden, and on February 1, 1922, the proprietor companies withdrew their support from the Central Indiana. Foreclosure proceedings were instituted by the Trustee of the mortgage on account of default in the payment of bond interest, the road was placed in receivership on November 1, 1922, and the property will doubtless be brought to judicial sale in 1923. The bonds having become due through the procedure for acceleration of maturity provided for in the mortgage, it will be necessary for this company to take up the \$750,000 of bonds guaranteed by it in protection of such guaranty and look to the property for such reimbursement as it may afford.

## Changes in organization

The Board records with deep regret the death during the year of the following:

Abraham T. Hardin, Director and Vice President, February 21;  
John Carstensen, Vice-President, April 14;  
William Rockefeller, Director and member of Finance Committee, June 24.  
The Board records the election or appointment of the following:  
John L. Burdett, Vice-President, June 14;  
Warren S. Hayden, Director, September 7, 1922, to fill the vacancy caused by the death of Mr. Hardin;  
Bertram Cutler, Director, October 25, 1922, to fill the vacancy caused by the death of Mr. Rockefeller;  
Alfred H. Smith, member of Finance Committee, November 29, 1922, to fill the vacancy caused by the death of Mr. Rockefeller.

Appreciative acknowledgment is made to all officers and employees of their loyal and efficient co-operation and service.  
For the Board of Directors,  
ALFRED H. SMITH, President.

## Railway Officers

### Financial, Legal and Accounting

**F. C. Sharood**, assistant general auditor in charge of valuation of the Northern Pacific, with headquarters at St. Paul, Minn., has been given charge in addition of all accounting having to do with capital expenditures. **W. C. Pinger**, auditor of capital expenditures, with headquarters at St. Paul, has been promoted to general accountant, with the same headquarters and has assumed special duties for the controller.

### Operating

**S. A. Pope** has been appointed supervisor of time service of the Southern Pacific, with headquarters at San Francisco, Cal.

**R. G. Carden**, superintendent of the Kansas City, Mexico & Orient, with headquarters at Wichita, Kan., has resigned to engage in other business.

**George Geiger**, trainmaster of the Denver & Rio Grande Western with headquarters at Pueblo, Colo., has been appointed assistant superintendent with headquarters at Delta, Colo.

**E. H. Shaufler**, general traffic manager of the Kansas City, Mexico & Orient, with headquarters at Wichita, Kan., has been appointed acting general manager, with the same headquarters, succeeding **A. De Bernardi**, who has been granted a leave of absence.

**E. W. Oliver** has been appointed manager of the Niagara, St. Catharines & Toronto, the Niagara, St. Catharines & Toronto Navigation, the Toronto Suburban and the Toronto Eastern (subsidiaries of the Canadian National) with headquarters at Toronto, Ont.

**P. Groome**, assistant superintendent of the Colorado division of the Union Pacific, with headquarters at Denver, Colo., has been promoted to acting superintendent of the Kansas division, with headquarters at Kansas City, Mo., succeeding **G. O. Brophy**, whose appointment as assistant to the general solicitor, with headquarters at Omaha, Neb., was reported in the *Railway Age* of June 16.

### Engineering, Maintenance of Way and Signaling

**F. C. Squire**, valuation engineer of the Oregon-Washington Railroad & Navigation Company with headquarters at Portland, Ore., has been appointed engineer western group of the President's Conference Committee of valuation with headquarters at Chicago, succeeding **J. R. Leighty**, whose appointment as special engineer in charge of valuation of the Southern with headquarters at Washington, D. C., was reported in the *Railway Age* of April 14.

### Traffic

**H. A. Cochran** has been appointed coal traffic manager of the Baltimore & Ohio with headquarters at Baltimore, Md., succeeding **H. M. Matthews**, deceased.

**C. K. Landes**, assistant general freight agent of the Minneapolis, St. Paul & Sault Ste Marie, with headquarters at Minneapolis, Minn., has been promoted to general freight agent, with the same headquarters.

**H. H. Gray**, district passenger agent for the Southern Pacific with headquarters at Chicago has been promoted to general agent, traffic department, with the same headquarters, succeeding **C. L. McFaul** whose promotion to general passenger agent with headquarters at San Francisco, Cal., was reported in the *Railway Age* of July 21.

**A. J. Morriss**, division freight and passenger agent of the Southern Pacific, with headquarters at Galveston, Tex., has been promoted to general agent, freight department, with headquarters at Houston, Tex. **W. J. Carter** has been appointed division freight and passenger agent, with headquarters at Galveston, succeeding Mr. Morriss.

**C. L. McFaul**, whose promotion to general passenger agent of the Southern Pacific, lines west of El Paso, Tex., and Ogden, Utah, with headquarters at San Francisco, Cal., was



C. L. McFaul

reported in the *Railway Age* of July 21, entered railway service on February 25, 1887, as a telegrapher on the Chicago, Burlington & Quincy at Denver, Colo. He was promoted to dispatcher and clerk in the office of the division superintendent at Denver in February, 1891. From July, 1892, to July, 1899, he was engaged consecutively as relief agent, agent, telegrapher, relief dispatcher and chief clerk to the division superintendent at various points on the Southern Pacific. He was appointed

assistant general manager of the Nevada Central in July, 1899, having entire charge of operation. Mr. McFaul re-entered the service of the Southern Pacific in July, 1901, and was appointed city freight and passenger agent at San Jose, Cal., in October of that year. He was promoted to traveling freight and passenger agent with headquarters at San Jose in September, 1904, and two years later was promoted to city ticket agent at the same place. On June 1, 1908, he was promoted to traveling freight and passenger agent of the Coast Lines and in April, 1913, was again promoted to district freight and passenger agent with headquarters at Salt Lake City, Utah. He was transferred to Fresno, Cal., in September, 1916. From September, 1918, to December, 1919, Mr. McFaul was on the personal staff of the district director of the central western region for the United States Railroad Administration. In December, 1919, he was appointed general agent, traffic department, with headquarters at Chicago, which position he held at the time of his recent promotion to general passenger agent, with headquarters at San Francisco.



International

A Portion of the West Bottoms Freight Yards, Kansas City, With Live Stock Exchange in Background